

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 768.—VOL. XX.]

LONDON, SATURDAY, MAY 11, 1850.

[PRICE 6D.]

LANDS, HOUSES, &c., IN AND NEAR IRVINE, FOR SALE, AND UPSET PRICES REDUCED.

**TO BE SOLD, BY PUBLIC ROUP, within the King's Arms Inn, IRVINE, on Monday, the 20th day of May next, at One o'clock in the afternoon, the following UNSOLD LOTS of the TRUST ESTATE of the late Colonel S. M. Fullerton:—**

1. The FARM of BARTONHOLM and SNODGRASS, with KIDSNEUK FIELD, possessed by Mr. George Melkie; also the portion of LAND of LONGFORD MOIRIS, with Stable and Garden, lying north of the River Garnock, possessed by Mr. Wm. McJannet; and the LANDS of CORSEFORD, possessed by Mr. Alexander Melkie—all lying in the parishes of IRVINE and KILWINNING.

The lands extend in whole to 236 Imperial acres, plan measure, or thereby; and there are besides about 12 acres of MINERALS in the lands occupied by the railway, and in a wing of the property adjoining on the north, which accompany this lot. The well-known SEAMS of COAL which run through the whole lands, may, to a great extent, be wrought out, without danger of inundation from the Parrot Seam, which was lately flooded by the Garnock, according to the opinion of mining engineers. Great facilities are afforded by the River Garnock and the Glasgow and Ayrshire Railway, running through the lands, for disposing of the coal, both for exportation and home consumption. Free land rental, £224, besides £26 for cottages. Upset price of this lot reduced to £10,500.

2. The Three Storey SLATED DWELLING-HOUSE, on the west side of the High-street of Irvine, with Offices and Garden behind the same, some time possessed by Colonel Fullerton, now by Mrs. Urquhart. The house has been lately enlarged and improved.

3. The BACK RIG, lying nearly opposite the Manse of Irvine, eastward from the road to the Golf-links, presently possessed by Robert Smith, containing 3 rods 104 fells, imperial plan measure, or thereby.

4. The SEAT, or PEW, in the galleries of the parish church of Irvine, being the back-most but one of the Bartonholm Lot.

Further particulars may be obtained on application to Messrs. Patrick M'Ewen and Carment, W.S., No. 32, Albany-street, Edinburgh; Messrs. Montgomerie and McJannet, bankers, Irvine; or to Rankin and Smith, writers, there.

The articles and conditions of roup, with the title deeds, may be seen in the hands of Rankin and Smith.—Irvine, April 24, 1850.

RHUABON, DENBIGHSHIRE.

EXTENSIVE SALE OF IRON-WORK, BUILDINGS, AND MACHINERY.

**MR. HILL will SELL, BY AUCTION, on Monday and Tuesday, the 20th and 21st days of May, 1850, all the BUILDINGS, ENGINES, BOILERS, WEIGHING MACHINES, WATER REGULATOR, BLAST-PIPES, HOT-AIR APPARATUS, quantity of curved pipes for disto, long lift of pump trees, working barrels, &c., railroads, cast-iron cylinders, stock of cast-iron rails, sleepers, floor-plates, pit-pulleys, carriages, and other useful castings, wrought-iron, smiths', &c., tools, pit frames, gins, flat-ropes, gin and capstan, ropes, coal waggon, pychies, &c., at the POKKEY IRON-WORKS and COLLIERY, near RHUABON, Denbighshire.**

The sale to commence each morning at Eleven o'clock.

Mr. Leigh Williams will be in attendance at the Pokkey Iron-Works three days previous, to show the lots.

MONMOUTHSHIRE.—SALE OF A VALUABLE IRON FOUNDRY AND PREMISES.

**MR. H. M. PARTRIDGE is instructed to SELL, BY PUBLIC AUCTION, at the King's Head Inn, Newport, on Wednesday, the 23rd day of May next, at One for Two o'clock precisely, all that valuable PROPERTY known as the MAES-Y-CWMWN IRON FOUNDRY,**

Situate in the parish of MOUYTHUS-LWYN, together with TWO good DWELLING-HOUSES and ENTRANCE LODGE.

The FOUNDRY is REplete with EVERY CONVENIENCE, and comprises above, engine, &c., from whence iron, coal, and coke may be obtained; there is a fine spring of water on the premises, and a small rivulet running through them.

A branch tramroad connects the foundry with the line of tramroad to Newport, Rhymney, Tredegar, &c., from whence iron, coal, and coke may be obtained; there is a fine spring of water on the premises, and a small rivulet running through them.

This property, which comprises two acres, is held under a lease for 90 years, from the 24th June, 1840, subject to an annual ground-rent of £11, and offers a most desirable investment to any person conversant with the business, which may, at a trifling expense, be very considerably extended, and adapted to fitting-up and other purposes.

For further particulars apply to Mr. Edmund Beckingham, West of England Bank; or to Mr. H. M. Partridge, auctioneer, house and estate agent, Newport, Monmouthshire. St. Woollos House, Stow Hill, April 25, 1850.

TO CONTRACTORS, BUILDERS, AND OTHERS.

**TO BE SOLD, BY PRIVATE CONTRACT, the ENGINES, MACHINERY, &c.,** which have been used in the erection of the Britannia-bridge, consisting of ONE 40-horse HIGH-PRESSURE ENGINE, with 18-inch cylinder, and 3-feet 6-inch stroke, with boiler complete, drum and hoisting gear; ONE 25-horse HIGH-PRESSURE ENGINE, with 14-inch cylinder, and 3-feet stroke, with portable boiler complete, drum and hoisting gear; travelling cranes, landing cranes, settling machines, single and double purchase crabs, blocks, chain and tackle of every description, and of first-rate quality.—Application to be made to Messrs. B. J. Nowell and Co., at the works, Britannia-bridge, Bangor, North Wales.

**FOR SALE, at TING-TANG, GWENAP, CORNWALL.—A HUNDRED-INCH CYLINDER and CASE, 11 feet long, with piston, piston rod, and cylinder bottom to match.** This cylinder is admirably adapted for a direct-acting engine, having a strong flange, expressly for being built in a loading (over an engine-shaft), if required, or coal pit. The hold-down bolts, and other articles, will be sold with or without the cylinder. This cylinder has only been worked within the space of two years, and will be sold for the very low price of £7 per ton, to include the case, piston, and cylinder bottom. The piston-rod will be sold with or without the other parts for 8d. per lb. Any company requiring immense steam-power for small capital, will find this an unusual opportunity.

To examine the above, please apply to Mr. E. Hales, on the mine; and for further particulars to Capt. Thomas Richards, Marazion.—April 22, 1850.

**FOR SALE, BY TENDER.—LOSTWITHIEL CONSOLS MINE.**—At a General Meeting of the shareholders in the above mine, held on the 2d inst., it was resolved, that in consequence of the inability of several shareholders to continue their interest in the mine, that the MINE and MATERIALS be advertised FOR SALE, BY TENDER, within three weeks from this date.

Tenders for the same are now solicited. The mine has been worked by the present company nearly four years, and was lately inspected by Mr. A. Murray, Jun., who reported to the shareholders, that to fully develop the mine, by which important results might be obtained, the levels on the east and west side should be extended fully 30 to 40 fathoms, at a cost of £7 per fathom (average), and occupying 6 to 8 months. The engine is a 36-inch by 10-foot stroke, and a small additional outlay for pumps would put the mine in an efficient state of working.

Tenders to be addressed to JAMES CROFTS, Secretary, No. 4, King-street, Cheapside, London. Dated May 8, 1850.

**VALUABLE SILVER-LEAD MINES.—TO BE LET, for a term of years, MINING GROUND, at LLANFAIR CLYDOGE, in the county of CARDIGAN, 4 miles from Lampeter, immediately adjoining the site of the mine now working by Dr. Guin, the ore of which has, for some time past, produced, from the high assay of silver, £26 to £27 per ton.**

For particulars apply to Messrs. Freshfields, solicitors, London; or to John Neale, Esq., Castle-llair, High Wycombe.

**BLAIR IRON-WORKS.**—These extensive IRON-WORKS with the LEASES of the MINERAL FIELDS, as formerly advertised, will be EXPOSED FOR PUBLIC COMPETITION on or about the month of APRIL next, if not previously disposed of by private bargain.—In the meantime offers will be received, and information afforded, by Mr. Brown, 38, St. Vincent-place, Glasgow.

**EAST OF SCOTLAND MALLEABLE IRON COMPANY.**—The Directors have been authorized to RECEIVE OFFERS for the PURCHASE, or LEASE, of the MALLEABLE IRON WORKS at DUNFERMLINE—comprising a STEAM-ENGINE, of 80-horse power, working the machinery, consisting of FORGE and 3 PUDDLE BAR TRAINS, of 16 inches diameter, HAMMER and PATENT SHINGLING MACHINE; also a 16-inch MERCHANT BAR or RAIL MILL, a 12-inch MILL, for ordinary sized merchant bars, and an 8-inch GUIDE MILL, 13 PUDDLING FURNACES, and 6 MILL FURNACES—the whole capable of producing 120 tons of bar-iron weekly.

A REFINERY STEAM-ENGINE, of 45-horse power, with blowing apparatus, complete, and two fires erected.

A complete SET of WORKSHOPS, containing a 20-horse power STEAM-ENGINE, driving a powerful roll-turning lathe, and blowing apparatus for smiths' fires.

A PUMPING and CLAY MILL STEAM-ENGINE, of 16-horse power, used for the manufacture of fire-brick, and pumping water for supply of engines.

Also, in course of erection, a STEAM-ENGINE, of 80-horse power, intended to drive the mills apart from the forges, having strong cast-iron framing laid down, and machinery suitable on the premises, which could be brought into active operation in a short period.

Together with the necessary TOOLS, LOOSE MACHINERY and STOCKS, of different kinds.

Offers will also be received for the PURCHASE of the ESTATE of TRANSY, consisting of about 107 Imperial acres, with elegant MANSION-HOUSE and PLEASURE GROUNDS, situated about half a mile to the east of the town of Dunfermline.

Applications may be made to Mr. James Inglis, Chairman of the Company; or to Johnstone, Russell, and Craig, writers, Dunfermline.

Dunfermline, March 16, 1850.

**MR. JAMES CROFTS, of No. 4, KING-STREET, CHEAPSIDE,** takes the liberty of soliciting the attention of CAPITALISTS (and more particularly so in consequence of the depressed and, in his opinion, still unsafe condition of railway property) to the MINING INTERESTS of GREAT BRITAIN, as offering, at this time, the SAFEST MEDIUM OF INVESTMENT of any adventures of an acknowledged speculative character, and TENDERS his SERVICES generally for the PURCHASE or SALE of MINING SHARES.

Mr. CROFTS has at present FOR SALE SHARES in the following Adventures:—

ASHBURTON UNITED (Tin), in 1024 shares, and a new issue of 1024 shares, on which 2d. per share is to be paid out of a maximum new capital of 4d. per share.

ESGAR LEE (Lead), in 1280 shares.—South Wales.

WHEAL BRAY (Copper), in 1024 shares.

BODCAL, or SOUTH WALES (Lead and Copper), in 2000 shares.

WHEAL LANGFORD (rich Silver, Gossan, and Lead), in 6000 shares.

BODMIN CONSOLS (Silver-Lead), in 1024 shares.

LLWYNMALES (Silver-Lead), in 1000 shares.—Cardiganshire.

GRAMBLEE AND ST. AUBYN, in 256 shares.

METROPOLITAN STONE COMPANY, in 100 shares.

WHEAL EMILY (Silver-Lead), in 1024 shares.—Devon.

HAFOD LLWYN (Silver-Lead), in 1000 shares.—North Wales.

WHEAL TRESCOLL (Tin), in 1100 shares.

TREGEAR CONSOLS (Silver-Lead), in 5000 shares.

In addition to the above, Mr. CROFTS has also generally FOR SALE SHARES in the MINES managed in his OFFICE, where the Cost-books, Lists of Shareholders, and periodical Balance-sheets and Reports may be inspected—viz.:

LAMHEROEE WHEAL MARIA (Copper) in.....	2048 shares.
WHEAL BENNY (Copper) .....	256 "
LOSTWITHIEL CONSOLS (Copper) .....	253 "
COMBLAWN (Silver-Lead) .....	500 "
WHEAL VINCENT (Tin) .....	1000 "
WHEAL SARAH (Silver, Gossan, and Lead) .....	1056 "

67. Mr. CROFTS is NOT A DEALER in SHARES for his own account, but only for principals.

**TENDERS FOR WELSH COAL AND NORWAY TIMBER.**

TENDERS may be FORWARDED to ME, on or before the 1st proximo, for SUPPLYING ONE THOUSAND FIVE HUNDRED TONS, more or less, as may be required, of WELSH COAL, of the best quality, for Steam-Engines, to be delivered at West Cardigan, Gonaema, and Craddock Moor Mines, between Midsummer, 1850, and Midsummer, 1851, in about equal quantities monthly, and so that the mines shall be kept constantly supplied; in default of which, and also of the quality being the best, the cost above the contract price of obtaining a supply elsewhere to be charged to the contractors. The mode of payment to be by acceptances, at three months, from the times (once in two months) of auditing the accounts.

TENDERS may also be FORWARDED to ME, on or before the 1st proximo, for SUPPLYING the above Mines, for 12 months, from Midsummer next, with NORWAY TIMBER, half Dram and half Longwood, of good quality and average lengths, to be delivered at the respective mines, in such quantities as may be required and when required, and to be charged at the measurement on which the duty has been paid.

Should the agents not approve of the quality of any timber sent in, the contractors to remove the same, and at the option of the respective adventurers, either replace it by an article of approved quality, or submit to a reduction from their bills of the amount of difference between the contract price and that at which the adventurers may obtain a supply from some other party; also, the amount of the like difference to be deducted from the contractors' bills, in respect of timber purchased elsewhere, in consequence of the contractors not sending in supplies when and as required.

Payment for timber by acceptances at three months, as for coal above.

Any mine may be tendered for separately, and either for coal or timber.

Lisakead, 1st of fifth month (May), 1850. EDWARD A. CROUCH.

**ROCHE ROCK TIN MINING COMPANY.**

No further SHARE, £3000, in 1000 shares, of 3s. each.

NOW AT WORK ON THE COST-BOOK SYSTEM.

BANKERS—The London and County Joint-Stock Bank.

MANAGER OF THE MINE—Capt. J. A. CROUCH.

SECRETARY—John Marthorpe, Esq.

OFFICES—1, ROYAL EXCHANGE BUILDINGS, LONDON.

This valuable MINE is situated in the parish of ROCHE, near St. Austell, CORNWALL, and is held under a lease of 21 years, at a royalty of 1-20th. It is bounded on the south-west by Old Beam Mine, and on the south-east by the Great Rocks Tin Mines—two of the largest and richest mines ever worked in this district; the richest profits from which exceed £250,000—both of which are now at work. The sett is in the junction of the kyllas and granite, which greatly enhances its value.

Most of the shares being taken, NO FURTHER APPLICATIONS can be received after WEDNESDAY NEXT, the 16th inst.

Applications for the remaining shares to be made to the secretary of the company, No. 1, Royal Exchange Buildings.

**STAFFORDSHIRE COAL MINING COMPANY.**

Capital £10,000, in shares of 4s. each, to be paid on allotment.

(No further call will be made).

BANKERS—Messrs. Rogers, Blding, & Co., Clements-lane.

THIS COMPANY is FORMED for WORKING valuable COAL MINES in STAFFORDSHIRE, proved by pits already sunk. The necessary machinery for commencing the colliery is erected; and, from estimates capably made, will return full 25 per cent. per annum.—Applications for prospectuses and shares to be made to W. M. Kearns, Esq., solicitor, No. 5, Red Lion-square; or to Charles F. Ash, Esq., C.E., at the Company's offices, No. 4, Charlotte-row, Mansion-house, London.

NO APPLICATIONS will be RECEIVED after SATURDAY, the 25th instant.

THOMAS S. BEST, Secretary.

**TREBELLANS and TREBSYKIN SILVER-LEAD MINES,** situate in the parish of CUBERT, in the county of CORNWALL, a short distance west of East Wheal Rose.

BANKERS—Messrs. Martin, Scott, and Martin, Lombard-street.

SECRETARY—Mr. R. Thomas.

OFFICES—8, GEORGE-ARD, LOMBARD-STREET.

These mines were lately worked and well known as the Cubert Silver-Lead Mines, from which about £7000 worth of ores were raised within two years. A larger engine being required, and by which means two productive lodes will be operated on at the same time, with little additional expense, the present proprietors have decided on disposing of a limited number of shares in this unusually promising undertaking, for that purpose. Seldom does such a favourable opportunity offer for temporary or permanent investment.

Mr. R. Thomas will, on application, afford every information that may be required.

**WARLEGGAN CONSOLS TIN AND COPPER MINES.**

(Situated on the CARADON RANGE, in the parish of WARLEGGAN, in the COUNTY of CORNWALL.)

CONDUCTED ON THE COST-BOOK SYSTEM.

Divided into 5000 shares, of 4s. each—1s. to be paid down, and the remainder, if required, in sums not exceeding 2s. 6d. per share, and at intervals of not less than three months.—The operations on the mines now being proceeded with, under the most favourable prospects.

FRESH MANAGERS.

JAMES SHELDON, Sheldra Villas, Upper Clapton.

WILLIAM MITCHELL, St. George's-terrace, Kensington.

M. SHAW, Malvern terrace, Barnsbury-park.

ROBERT BAXTER, Newgate-on-Tyne.

For more particulars—Joseph Elliott Square, Plymouth.

SECRETARY—W. L. TURNAN, 28, Threadneedle-street.

"The peculiar advantages of these mines are, that the lodes, as far as they have been developed, have been largely productive of very rich ores, and are situated in a highly mineralized district, close in the immediate vicinity of some of the largest dividend-paying mines in the county. In addition to which, the machinery, consisting of water-wheel, stamps, tram-roads, and all the necessary plant and buildings are erected; a very large amount of available work is done; the mine is 21 years, unexpired; the dues are very moderate (1-20th); the mines being situated on a common, no surface damage is payable; and there is an unfailing supply of water, rendering costly and ever-expensive steam machinery unnecessary."

All parties desiring an interest in the undertaking, are at liberty to send their own agents to inspect the mines.

Applications for the remaining shares may be made to the secretary, W. L. Turnan, at the offices, 28, Threadneedle-street, London, where reports and a plan of the mines may be seen, and further particulars obtained.

**WHEAL SAMSON CONSOLS.—In 10,000 Shares of 4s. each.**

All paid.—No calls.—No liabilities.—No forfeiture of shares.

This MINE is situated in the parish of ST. TEATH, CORNWALL, and is held under a lease for 21 years, at 1-15th dues. Several branches of the lode have been opened upon at about 15 fathoms from the surface, at ores have been extracted of unprecedented value. The opportunities for working the mine, at a trifling cost, are unusual. The whole of the lode is completely drained to a depth of from 70 to 80 fathoms, which may be worked away by levels from the sea shore—obviating the necessity of erecting machinery or sinking shafts.

An average assay produced—copper, 1 per cent.; silver, 340 ounces per ton; gold, 11 dwts. 42 grains; while some samples have produced 600 ounces of silver, and 5 ozs. of gold to the ton of ore.

For prospectuses and shares, apply the secretary, at the offices, 15, Fish-street-hill.

**MINING JOURNAL.—WANTED TO PURCHASE, a COMPLETE SET, from the 1st January, 1842, to the present time.—Apply to Mr. John Richards, No. 12, George-yard, Lombard-street.**

**WANTED.—TWO or MORE SECOND-HAND BLOWING CYLINDERS,** about 18-inch diameter, and 2-feet 6-inch stroke.—Address "H. C. J.," at the office of the Mining Journal, 26, Fleet-street, London.

**PARTNERSHIP—MINING ENGINEERS AND SURVEYORS.**—The ADVERTISER, who is well connected, and who has served his time with a Mining Engineer and Surveyor, and has since had much experience in the Management of Collieries, is desirous of connecting himself in PARTNERSHIP with a GENTLEMAN engaged in SIMILAR PURSUITS, and by whom a steady partner, of active business-habits, would be appreciated. Would not object to treat with a General Land Agent and Surveyor; or to accept a SITUATION with either of the above, provided a partnership could not be arranged.—Letters to be addressed to "A. B.," Post-office, Bath.

**STEAM-ENGINE WANTED.—A SECOND HAND 70-in.** diameter STEAM-ENGINE, or therabouts, Hyde-park, and 36, New Bond-street, will HEAR SOMETHING to his ADVANTAGE by applying to Mr. Wheatley, solicitor, 7, Symonds Inn, Chancery-lane; or any party giving his address, or producing a certificate of his death, will be rewarded. The said R. O. Aland was lately seen in the neighbourhood of Stoke Climsand, Cornwall, and is supposed to have fallen down a shaft.

**ROBERT OWEN ALAND,** late of 29, Gerard-street, Soho.

SILVERSMITH, and of 1, Cambridge-terrace, Hyde-park, and 36, New Bond-street, will HEAR SOMETHING to his ADVANTAGE by applying to Mr. Wheatley, solicitor, 7, Symonds Inn, Chancery-lane; or any party giving his address, or producing a certificate of his death, will be rewarded. The said R. O. Aland was lately seen in the neighbourhood of Stoke Climsand, Cornwall, and is supposed to have fallen down a shaft.

CONSULTING SHAREBROKERS—"FACTS AND FIGURES."

**MESSRS. R. B. WATSON & CO.,** lately of Leeds, and formerly of Hall, have resumed BUSINESS, as CONSULTING SHAREBROKERS, in LONDON. In the former place R. B. W. acted as a sharebroker for 10 years, and in the latter, as a commercial broker, for 10 years. Having drawn up the last half-yearly accounts of the principal railways, upon one uniform plan, they propose offering to investors, but not to mere speculators, their opinion of railways, founded upon these facts and figures. For terms, and a circular, apply at No. 39, Old Broad-street.

**MINING PROPERTY.**—Mr. HERRON has SHARES in the best DIVIDEND MINES FOR SALE, and which will give to the purchaser 17 to 25 per cent. for the outlay; amongst others are the following:—East Wheal Rose, North Pool, Great Devon Consols, Alfred Consols, Trevelkey, Tincroft, Wheal Trevelkey, Tremayne, South Wheal Tolgus, Condarrow, Stry Park, South Wheal Basset, South Wheal Frances, and North Roseau—Imperial Brazilian, Coates, St. John del Rey, and Alton Mines.—Mining Offices, 33, Clements-lane, Lombard-street.

**MR. TRIPP, MINE AGENT, transacts BUSINESS (EXCLUSIVELY FOR PRINCIPALS) ON COMMISSION.** He is prepared to BUY and SELL in the best DIVIDEND-PAYING MINES; also in NEW ONES, having present and prospective advantages, of which the following are some:—Devon Great Consols, North Roseau, Botallack, Wheal Margaret, Levant, South Tolgus, Wheal Bal, Henneck Silver-Lead, Birch Tor, Kingsett and Bedford, Russell, Longmold, &c. &c. Mining and Share Offices, St. Michael's-chambers, St. Michael's-alley, Cornhill, London.

**MR. T. A. READWIN, MINING OFFICES,** 2, WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.

**MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR.**

No. 15, OLD BROAD-STREET, LONDON.

**MR. GEORGE BATE, JUN., CIVIL ENGINEER AND SURVEYOR, WOLVERHAMPTON.**

Offices in Queen-street, corner of Piper's-row.

N.B.—UNDERGROUND MINING SURVEYS accurately executed.

**JAMES LANE, MINING SHARE DEALER,** 80, OLD BROAD-STREET, LONDON.

**CAMBORNE CONSOLS MINING COMPANY.**—Notice is hereby given, that a SPECIAL GENERAL MEETING of the shareholders of this Company will be HELD at the Company's offices, 23, New Bridge-street, Blackfriars, London, on Thursday, the 23rd day of May inst., at One of the clock in the afternoon precisely, for the purpose of sanctioning and confirming the contract agreement and arrangement entered into by the Directors for obtaining the Leases of the Lands and Mines which have been taken for the use of the Company, and for obtaining from the proprietors or other persons interested in a certain shaft, called "Martin's Shaft," situate in Dulcote Mines, adjoining to the south-eastern boundary of the lands and mines leased to this Company, called the "Camborne Consols Mines Set," for obtaining the right or privilege of using, either wholly or in part, the said shaft, called Martin's Shaft, for communicating with the several levels of the Camborne Consols Mines set, or otherwise for the use of this company; and for confirming and ratifying all such payments as have been made under and by virtue of such contract; and also for adopting such resolutions, and giving such directions as may be deemed necessary or expedient for effecting the purposes aforesaid, or in relation thereto.—Dated the 25th day of April, 1850.

By order of the Board of Directors, H. L. T. VON USTER, Secretary to the Company.

**GREAT MICHELL CONSOLS.**—Notice is hereby given, that PARTIES who have any DEMANDS AGAINST the ABOVE MINE are requested to SEND THE PARTICULARS of the same to ME, on or before the 31st instant, and unless such claims are received by that date, the parties will be excluded from the benefit of the final division of assets about to be made.

By order of the Committee of Management, 50, Threadneedle-street, London, May 11, 1850. G. KIECKHOEFER, Sec.

**GUADALCANAL SILVER MINING ASSOCIATION.**

Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of shareholders will be HELD on Wednesday, the 29th May inst., at Two o'clock precisely, at the offices of the Association.

By order, H. T. RYDE, Secretary.

34, Broad-street-buildings, London, May 9, 1850.

**IRELAND—GENERAL MINING COMPANY FOR IRELAND.**—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors will be HELD at the office of the Company, No. 5, Burch-gate, Dublin, on Monday, the 3d day of June next, at the hour of Eleven o'clock in the afternoon, to receive the half-yearly accounts up to the 1st April last, and the auditors' report thereon, and to transact the general business of the company. The meeting will be made special to reduce the number of auditors to one; to elect one auditor of the company for the ensuing year, if such reduction be agreed on; to elect two auditors of the company for the ensuing year, if such reduction be not agreed on. The ballot for which will commence at seven o'clock in the forenoon, and close at Three o'clock in the afternoon of the above day.

Office, 2, Burch-gate, Dublin, May 1, 1850. THOMAS MAGUIRE, Secretary.

**PEMBROKESHIRE IRON AND COAL COMPANY.**

The Board of Directors do hereby give Notice, that the YEARLY GENERAL MEETING of the shareholders of the Company will be HELD on Wednesday, the 29th inst., at One o'clock precisely, at the offices of the Company, 4, South-square, Gray's Inn, for the purpose of laying before the meeting the accounts of the Company.

By order of the board of directors, 4, South-square, Gray's Inn, May 7, 1850. W. FOLEY, Secretary.

**WHEAL MAY MINING COMPANY.—A GENERAL MEETING** of this Company will be HELD at their offices, 15, Old Broad-street, at Twelve o'clock, on the second Monday in May (the 13th), for the purpose of revising the Rules of the Cost-book, and deciding the necessary steps to be taken to raise additional capital to carry out the working of the mine on a much larger scale.

CHARLES SAMUEL RICHARDSON, Purser.

15, Old Broad-street, City, April 25th, 1850.

**ASSAYING AND ANALYSIS.—ASSAYS AND ANALYSES** of MINERALS, METALS, SOILS, FURNACE, and all other MANUFACTURING PRODUCTS. INVENTORS and INTENDING PATENTEES assisted in PERFECTING any INVENTION involving an intimate knowledge of chemistry.

INSTRUCTION in all branches of ASSAYING, ANALYSIS, and METALLURGICAL and MANUFACTURING CHEMISTRY.

Communications to be addressed to Mr. Mitchell, 23, Hawley-road, Kentish Town.

**ECONOMICAL BLASTING.—COPELAND'S SAFETY**

WATERPROOF BLASTING CARTRIDGES are offered with confidence to the notice of Managers of Mines, Quarries, Collieries, and to Engineers of Railways and Submarine Works. They give SAFETY from PREMATURE EXPLOSIONS, and are certain in their effect—nor one misfire having occurred out of upwards of 20,000 blasts. When used, the workmen prefer them to any other method of blasting.

Pendennis, Falmouth, May 6, 1850.

NEWSPAPER



**The Key to Railway Investments.—Part IV.: Eastern Counties Railway.—By JOHN WHITEHEAD, Author of Railway and Government Guarantees, &c. London: John Weale, High Holborn.**

We have received the fourth part of Mr. Whitehead's work, comprising the Eastern Counties Railway, in which are some excellent remarks and suggestions. Take the following as an instance of how far opposition of directors is injuring this, as it has nearly every other, railway property:—

Various proofs of the truth of the allegation here made against the management could be adduced; one, however, will suffice. The first-class fare to Ely is 16s. 6d., the distance by railway from London being 79½ miles; whilst to Wisbeach, 24 miles further distant, the fare is but 2s. more; so that, although the Eastern Counties Company charge up to Ely at the rate of 273d. for each mile travelled by every first-class passenger, they convey a passenger a further 24 miles for 1d. per mile. No wonder that the working expenses of the company are so excessive. Can profit be the object in view by this notable policy? Or, is it not really to prevent traffic from passing over a neighbouring line, which, fair dealing observed, would take its course? The effect of this grand discovery in money-making is, that passengers to Lynn, in place of taking the East Anglian Company's line at Ely, pass from Cambridge around by the St. Ives branch to Wisbeach, and thence proceed to Lynn; and so the Eastern Counties Company make a heavy loss by every passenger they thus cleverly obtain, and, by consequence, deprive the East Anglian Company of its legitimate trade. Can railway absurdity further go? If the fare from London to Wisbeach is now equitable assessed, that from London to Ely is unfairly adjusted. If 16s. 6d. be the proper rate from London to Ely, then 31s. 11d. should be the rate from London to Wisbeach. If, on the contrary, the Wisbeach scale be the more just, then the fare from London to Ely should be reduced from 16s. 6d. to 13s. 10d.


As a remedy for the abuses which exist, he recommends that the Eastern Counties, the Eastern Union, the Norfolk, and the East Anglian boards, simultaneously come to resolution, that it is expedient that the four companies should forthwith cease as separate interests, and hereafter become one united concern; that Parliament be applied to for powers of amalgamation; that the day for such amalgamation be a distant one (say, 1st January, 1858), thus giving each every fair opportunity of developing its own resources; that, in the interim, the four railways be under the control of a joint board, with complete powers of management over the whole lines. There are further some recommendations for dividends and disputed questions. We come to a part of his remarks, however, with which we cannot agree—his urgent recommendation of the light engine system, now being by many cracked up as a panacea for all railway ills; but of which we cannot see that there has been any sufficient proof to justify railway directors to come to an hasty decision on the subject. We noticed, a fortnight since, that we had no doubt that such engines were of the proper calibre for branch lines; but would not accomplish heavy trains on long trunk lines. If Mr. Samuel's engine of 17 tons weight will transport the same number of passengers for 7 to 8 tons of coke per mile, at the same speed as a large engine and tender, weighing 30 tons, consuming 34 lbs. per mile, it is well worth deep consideration; but we contend there has not been sufficient experience, with continually increasing passenger trains on trunk lines, often reaching 100 tons, to warrant what would be a ruinous expense in constructing an entire new rolling stock. Probably the above heavy engine would transport a train, weighing 100 or more tons, with a like consumption of fuel.

**PERSONS AFFLICTED WITH SCURVY, SCORBUTIC HUMOURS, OR DISEASES OF THE SKIN, SHOULD USE HOLLOWAY'S OINTMENT AND PILLS.**—Scurvy, ringworms, and other cutaneous disorders, are engendered by the impurity of the blood, and the only sure means to eradicate such complaints is to undergo a course of Holloway's Pills, and, at the same time, apply externally his invaluable Ointment. Cures performed by these wonderful medicines are daily attested, proving their astonishing efficacy in purifying the blood, strengthening the constitution, and re-establishing health. They are equally certain in the cure of cancerous sores, ulcerated wounds, and glandular swellings, and persons so afflicted should have recourse to these excellent medicines.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

**IMPROVED LIFTING JACKS.**

MANUFACTURED BY  
**W. AND J. GALLOWAY,**  
PATENT RIVET WORKS,  
MANCHESTER.

••• The attention of parties who employ  
**Lifting Jacks,**  
is respectfully requested to the superiority of those annexed, over those hitherto in use.

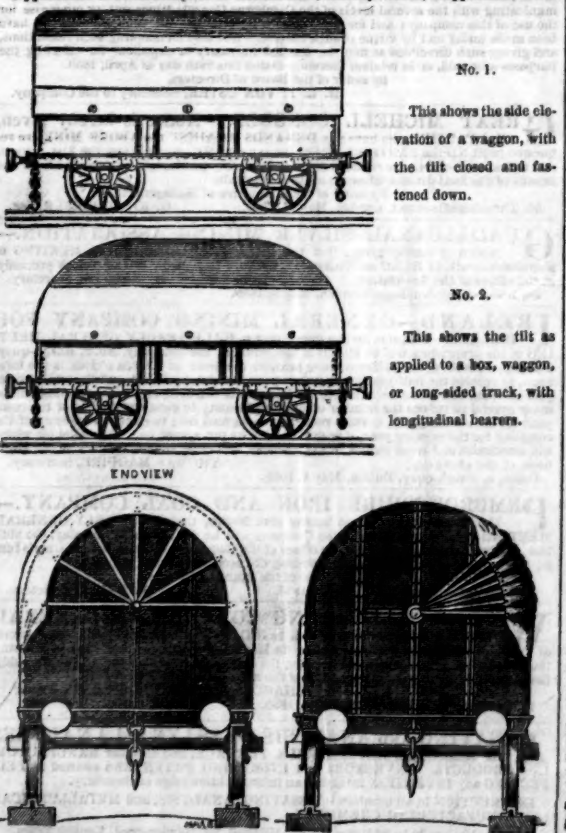


BY HER MAJESTY'S ROYAL LETTERS PATENT.  
IMPORTANT TO RAILWAY COMPANIES, CARRIERS, AND OTHERS.  
**ROWLAND BROTHERHOOD'S TILT, for COVERING RAILWAY TRUCKS, WAGGONS, &c.**

This invention allows of trucks or wagons being covered or uncovered with surprising ease and facility, so that one porter can uncover two trucks in the space of a minute, and two can re-cover both in the same time. It allows of a small portion, or the whole area of the truck, being uncovered, and affords great facility for loading and unloading, and protecting the goods in those operations, as well as in the course of transit. It can be secured by locks and keys, thus rendering merchandise secure from plunder. It is cheap in its construction, can be applied to railway trucks and wagons generally, and is easily attached or detached. It runs smoothly through the air at high speeds, and against head winds.

This Tilt has been in use on different parts of the broad gauge during the winter, and has been found to work remarkably well in the severest weather. Experienced and practical persons, who have the management of large goods' stations, and have seen these tilts in working, and who know the great wear and tear of cloths, tarpauling, &c., and the inconvenience of existing modes for goods' covering, are of opinion that these Tilts will be of great utility in railway service. The patentee is himself prepared either to construct or, on moderate terms, to license parties to construct his patent Tilts.

Applications to be addressed to R. Brotherhood, Railway-Works, Chippenham, Wilts



This is an end elevation of the same on a larger scale, showing the pin and fan which supports and carries over the longitudinal bearers to which the cloth is attached, and which when open lies compactly folded along the side of the truck, leaving the whole area of the truck open for receiving or discharging its contents by crane or otherwise.

The tilt is applied to box, or low-sided trucks, with curved longitudinal bearers.

## Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.	
THIS DAY	Asiatic—A, New Burlington-street..... 2 P.M.
MONDAY	Geographical—5, Waterloo-place..... 7 P.M.
	British Architects—16, Grosvenor-street..... 8 P.M.
	Medical—3, Bolt-court, Fleet-street..... 8 P.M.
TUESDAY	Medical and Chirurgical—83, Berners-street..... 8 P.M.
	Civil Engineers—29, Great George-street..... 8 P.M.
	Zoological—11, Hammer-square..... 3 P.M.
	Syrio-Egyptian—71, Mortimer-street, Cavendish-square..... 7 P.M.
WEDNESDAY	Society of Arts—Albion..... 8 P.M.
	Microscopical—21, Regent-street..... 7 P.M.
	Ethnological—17, Saville-row..... 2 P.M.
	Royal Botanic—Inner Circle, Regent's Park..... 2 P.M.
THURSDAY	Royal—Somerset-house..... 8 P.M.
	Antiquaries—Somerset-house..... 8 P.M.
FRIDAY	Royal Institution—Albemarle-street..... 8 P.M.
SATURDAY	Westminster Medical—17, Saville-row..... 8 P.M.

### ROYAL INSTITUTION.

On Saturday, Dr. Faraday delivered his second lecture of the series upon some points of Domestic and Chemical Philosophy—the subject being a “candle.”

The Professor first treated of the materials from which candles are made, and the processes of their manufacture, and then proceeded to consider the peculiar conditions requisite to form a candle, and the changes that ensue during its combustion. Specimens of wax, spermaceti, and of tallow, in their various stages of purification, were exhibited, and the processes of making spermaceti and wax candles were illustrated. The purpose of the plaited wick was explained to be to give it a twist as the candle burned, so that the wick may be kept at the verge of the flame, where the greatest heat is, and there be completely consumed, and by this means to avoid the necessity for snuffing. The mode of casting spermaceti candles in moulds, and of extracting them when cold, by giving each one a blow inwards, was shown; also the method of making wax candles by a succession of layers, no plan having hitherto been contrived by which wax candles can be cast in moulds. In making wax candles, the operator has a number of long wicks fixed to a suspended horizontal hoop, and over these wicks he pours the melted wax, which cools as the hoop turns round. Having poured on as much wax as experience tells him is requisite, he cuts off the ends, reverses the position of the candles on the hoop, and repeats the operation of pouring, so that the candle may be of the same thickness at both ends. The requisite conditions of the materials of which candles are composed were stated to be that the combustible fuel should be solid, be of a nature to melt readily, but not too quickly; and that, when melted and carried to the flame by the capillary attraction of the wick, they should be convertible into carbonated hydrogen gas by the heat evolved. Several examples were given of the capillary attraction exerted by cotton, the most curious of which was the application of it for the combustion of potassium. A thick piece of wax was placed round a cotton wick, and touching the wick, at the top, was a piece of potassium. This was put into a plate containing water, which rose up the fibres of the cotton, and coming into contact with the inflammable metal, ignited it. The necessity for the materials employed as candle fuel having the proper melting point was illustrated by showing the opposite qualities in gutta percha and in camphor. A piece of candle, made experimentally of gutta percha, burned like a link, the whole substance of the combustible taking fire, because the material does not melt readily; a camphor candle, on the contrary, melted too quickly, and the whole inflamed rapidly. In a well formed candle, the wax, or tallow, is melted in the reservoir formed by the heat; the liquid fuel is conveyed by the wick to the flame, it is there converted into hydrogen gas, and by its inflammation sustains the series of continued combustions. The hydrogen gas flame has no illuminating property, though it possesses great heat, and that heat enables it to burn the carbon of the fuel, from which only the light of the flame is derived. In illustration of the fact that it is the incandescence of solid matter which produces the light of flame, Dr. Faraday introduced different substances into the almost invisible flame of hydrogen gas; of which lime, though itself incandescent, gave the most brilliant light. The Drummond light is, indeed, produced by the incandescence of lime exposed to the powerful effect of a jet of flame in which hydrogen and oxygen gases are combined. The flame of a candle is not, as it appears to be, a solid volume of fire, but consists of a hollow cone, with a thin layer of flame on the outside, where the evolved gas comes in contact with the air. The hollowiness of the flame was shown by the following experiment. A piece of writing paper was held horizontally in the middle of the flame until the back became scorched; but the mark of burning was not that of a disc, as it would have been had the flame been solid, but it formed a ring, in the centre of which the paper was not marked. Though in the ordinary burning of a candle vapour and gas, if the shadow of the air from the rising of the vapour and gas, if the shadow of the flame be thrown on a screen, by the rays of the sun or by a Drummond flame be thrown on a screen, by the rays of the sun or by a Drummond light, a very active process is perceptible to the flame. Dr. Faraday exhibited these effects by means of a Drummond light, which he employed in the first instance for showing the shadows of bubbles of carburetted hydrogen and of carbonic acid gases, thrown upon a screen. The bursting of these bubbles produced a curious and beautiful effect. When the bubble of carburetted hydrogen gas was burst, the shadows appeared broken into parts, and rose rapidly up the screen, the mixture of the gas with common air presenting the same striated appearance as the mingling of liquids of different densities. A similar appearance was produced on the bursting of the bubble blown with carbonic acid gas, but the movement was downward instead of upward, that gas being nearly twice as heavy as common air. When the flame of a candle was interposed between the light and the screen, the shadows of the smoke and of the vapour were seen rising perpendicularly for a considerable height, and a violent agitation was visible around. The remarkable phenomenon presented in these experiments, with which the lecture concluded, was, that they, in reality, “shadowed forth the forms of things invisible.”

### INSTITUTION OF CIVIL ENGINEERS.

MAY 7.—WILLIAM CURRIE, Esq. (President), in the Chair.

The paper read was “On the Application of Water-Pressure, as a Motive-Power, for working Cranes and other kinds of Machinery,” by Mr. W. G. Armstrong, F.R.S., Assoc. Inst. C.E. The object of the paper was to direct attention to the advantages of a more extended application of hydraulic pressure as a motive-power, and to point out the means of attaining this desirable end; illustrating the arguments by descriptions and drawings of the engines on this principle already erected, since the year 1845, when the author first designed a crane, to be worked by the pressure of water from the street water pipes, at Newcastle-upon-Tyne. The principle of these engines, as applied to cranes, was described to be very simple. In order to lift a weight, the water, under a pressure of about 100 feet head, or more, being admitted through a slide valve into a cylinder, exerted a force on a piston, whose rod was connected with the hoisting chain, so arranged by passing over several pulleys, as to increase its length of travel to the requisite duty to be performed; the piston receding from the pressure therefore raised the weight to the height required. The lowering of the weight was accomplished by a reverse action, and the crane was turned in either direction by a similar action of smaller cylinder, whose piston rod was connected with a rack, working into a circle of teeth, fixed to the base of the moveable frame of the crane. The action of these machines was described to be very smooth and steady, ingenious appliances being adopted for obviating the shock that would otherwise be caused by the sudden closing of the slide valves, and all the different operations being under the perfect control of a few regulating handles. In cases of a great diversity of power being required, separate cylinders were used, so arranged, as that their action could be combined, according to the force required. The speed of working had no other limit than the size of the supply pipe.

Allusion was made to the advantage of employing hydraulic pressure in mercantile docks, for hoisting heavy weights, for whipping light goods out of ships, and for opening and shutting dock gates, swing bridges, and sluices. Its facility of transmission, its safety, an constant readiness for use, rendered it peculiarly suitable for these purposes. It would generally be preferable in such cases to employ steam-power to force the water, rather than to be dependent upon town water-works; and a tank upon a tower, or upon an eminence, would form a convenient magazine of power, enabling the engine to act continuously with a uniform load. Large air vessels had also been successfully employed, instead of an elevated tank. Hydraulic pressure might also, in many cases, be advantageously employed for purposes requiring continuous rotation. There were many natural situations where mountain streams might be arrested, or surface-water be impounded on elevated ground, and be conveyed by a pipe into a neighbouring valley, where great mechanical efficiency might be derived from a small supply of water, by the use of water-pressure engines. In mining operations, also, the anger and inconvenience of underground steam-engines might be obviated by substituting water-pressure engines, conveying the water down the shaft in pipes, and returning it to the surface, by the action of the pumping engine above ground. In such cases the water was merely the vehicle for transmitting power into the mine.

A water-pressure engine had been lately very successfully applied by the author, in South Hetton Colliery, for the action of waggon upon an underground railway. Similar engines had also been erected in the lead mines, at Allendale, for lifting ore, and other purposes. Reservoirs were there formed upon the neighbouring hills, and pipes were carried into the mines to supply the engines, the expended water flowing off by a level. Other engines of the same description were also in course of action, for surface operations, at the same place, such as crushing ore, and raising minerals from the shafts.

In their general character, these engines were similar to reciprocating steam-engines. The slide valves were balanced by equal pressures in opposite directions, and were constructed to open very spacious water passages. The liability to concussion, on the closing of the exhaust port, was obviated by the appli-

cation of relief valves, which were lifted by the compressive action of the piston causing it to act for an instant as a pump, in forcing back the opposing water into the supply pipe. In cases where the engines had been applied to hauling, or winding, four cylinders placed diagonally in pairs, had been used. In other cases, two cylinders had been applied, the uniformity in the motion of the column being maintained by a loaded plunger. The winding engines were reversed by a slot link apparatus, similar to that of a locomotive engine, and which was worked by the pressure of the water, acting under the control of a valve. The regulating and reversing valves were each placed at the mouth of the shaft, at a distance from the engine, the operation of which could thus be directed with great accuracy and safety.

The drawings which accompanied the paper gave representations of an hydraulic crane, for shipping coals at Glasgow; hydraulic platform cranes, at the railway station, Newcastle-upon-Tyne; hydraulic hoisting machines, at the warehouses of the Albert Docks, Liverpool; a water-pressure engine, for a crushing mill at Allendale; a similar engine, used at the same place, for winding; and numerous details of all these machines.

At the monthly ballot the following candidates were duly elected:—Messrs. J. G. Appold, C. Clark, W. Croxley, J. Freeman, F. H. Johnson, J. H. Jones, R. W. Kennard, and A. Ogilvie, as associates. The paper announced to be read at the next meeting, Tuesday, May 14th, was “Description of the Navigation at Newry,” by Sir John Rennie, M. Inst. C.E.

## Proceedings of Public Companies.

### MEETINGS DURING THE ENSUING WEEK.

THIS DAY	General Life and Fire Assurance Company—offices, at Twelve.
MONDAY	West Wyal Jal Mining Association—offices, at Twelve for One, Wyal Jal Mining Company—offices, at Twelve.
	Medical, Legal, and General Mutual Life Assurance Co.—offices, Twelve.
TUESDAY	Equitable Gas-Light Company—offices, at One.
	Guardian Assurance Company—offices, at Twelve.
WEDNESDAY	Imperial Continental Gas Association—offices, at Two.
THURSDAY	Provincial Bank of Ireland—offices, at Twelve.
	Exeter and Exmouth Railway—London Tavern, at One.
	Great Western Railway—Paddington Station, at Twelve.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

### LEGAL AND COMMERCIAL LIFE ASSURANCE SOCIETY.

The fourth annual meeting of the members of this society, took place at the establishment, Cheapside, on Wednesday, the 5th inst.

WILLIAM LAWRENCE, Esq. (Alderman and Sheriff), in the chair.

Mr. FARNELL (the actuary) read the following report of the directors:—

The directors present to the proprietors and policy-holders a statement of the affairs of this society from its commencement to the 31st of December, 1849, with special reference to the business transacted during the last year. From the establishment of the society to the 31st of December last, 727 policies have been issued, of these 560 remain in force, producing an annual income of 6092l. 12s. 4d. One hundred and sixty-seven policies have lapsed by death and otherwise, on which the premiums received by the society amount to 2585l. 14s. 4d. The claims on the society by death, arising from eight policies, amount to 2449l. A further amount of 749l. on two policies has been paid since the 31st of December. During the past year 235 new policies have been issued, on which the amount of annual premium is 3565l. 7s. 2d. The average age of lives assured is 33 years, and the average amount of the policies is 388l.

The appointment of an actuary to the society engaged the attention of your directors for many months, and after anxious inquiry, they selected for the situation Mr. Thomas W. Farnell; the high testimonials of that gentleman, together with his long experience in every department of life assurance, and especially as manager of the loan department of the Victoria Assurance office, in which he has been actively engaged for 11 years, lead your directors to hope that they have made an appointment that will conduce much to the prosperity of the society, and the directors appeal to the share and policy-holders to assist the new actuary in his exertions to extend the business of the society.

The actuary, soon after his appointment, suggested various modifications in the tables previously in use, and also constructed several new tables, which the directors have approved, believing they are likely to extend the usefulness of the society. They would call the attention of the share and policy-holders especially to the deposit table, whereby a person insuring can discontinue paying his premium at any time, and be entitled at death to a sum of money increasing according to the number of premiums that have been paid. This table, with several new features introduced, your directors feel convinced must become popular when properly understood, and that assurers will derive many important advantages by the plans, there being no risk of losing all they have paid after payment of several premiums, because they may be unable, from a change of circumstances, to continue payment of future annual premiums.

During the past year nearly 300 new agents have been appointed, and instructed in their duties in the principal cities and towns of England, the expense attendant on these appointments, though it will arise therefrom. The loans granted during the past year have not been to a great extent, 5106l. having been lent to 22 principals with their sureties on personal security, and 2565l. to 11 persons on freehold or leasehold security, and the loans previously made have been repaid with much regularity.

The directors have reason to be well satisfied with the progress made by the society during the past year, the increase in the amount of business transacted last year over that of the previous year being in new premiums more than 84 per cent. During the four months of the current year, up to the 30th April, there has continued to be a progressive increase over the amount of last year, the number of policies in that period being 91, and the amount of new premiums 1229l. 16s. 10d.—an increase in the amount of new premiums of 34 per cent. over last year, or of 150 per cent. over the previous year. Such being the present position and prospects of the society, the directors feel themselves justified, in accordance with the Deed of Settlement, in recommending the payment of interest at the rate of 4 per cent. for the past year to the shareholders, on the amount paid on their shares.

The balance-sheet was also read to the meeting.

The CHAIRMAN said, in moving the adoption of the report, the gentlemen present must bear in mind the short period which this society had been established. In calling attention to the state of this institution, he must refer back, and take a short historical view of it. To arrive at a sound position, all such societies must go on progressively, and in that way some of our largest institutions had arrived at their present eminence. For the first two or three years every society had difficulties to encounter, and onerous duties to be performed, seeing how persons are always on the look out to victimise new offices. It was for this reason they always rejected a larger number of policies, in relation to the number presented, than was usual with offices of longer standing, preferring a moderate gain to involving themselves in double risks. According to the evidence of their officers, it appeared that 1224 policies had been offered to this society, out of which they had accepted 727. Out of that number 167 policies had lapsed, and during the whole period since the society had been established, there had only been eight deaths. Now, the number of policies at present in this office—that was to the end of the year—was five hundred and sixty. Of this number two hundred and thirty-five were issued last year. Looking at this number, and the proportion issued during the last year, he hoped they would consider that the society was in a very healthy state. (Hear, hear.) At all events, they were in a very progressive state, and this ought to be satisfactory to every shareholder in the society. (Hear, hear.) Undoubtedly, the great increase of the past year must be attributed to the course adopted by the directors, at the suggestion of many parties, of establishing agencies in various parts of the country. They had the advantage of life and fire by paying one-half of the expense of these agencies, which were more than 500 in number. He had stated that 235 policies were issued during the past year, and if they had brought into this report those from the 1st Jan. to the 30th April, 1850, a period of four months, they might have added 91 more, yielding annual premiums to the extent of 1229l. Now, those of the whole period were but 6092l., to which they could now boast of adding, for the first four months of this year, 1229l., making 7321l. per annum. (Hear, hear.) The sum received on lapsed policies amounted to 2585l., which would more than meet all their real losses up to the 31st of December last, which only amounted to 2449l. (Hear.) The average of the lives assured was 33 years. The result of their operations was so satisfactory, and the society was in such a sound and healthy state, that the directors had every confidence in the future, and, therefore, they felt fully warranted in paying a dividend of 4 per cent. to the shareholders for the past year. In conclusion, he would move that the report be received and adopted, and entered on the minutes.

Mr. LISTER had much pleasure in seconding the motion.

Mr. HARRISON suggested that the accounts should in future show the value of the premiums on policies in force, and the present value of the sums assured, in addition to the statements given.—The CHAIRMAN, in reply, stated that the period fixed by the Deed of Settlement for such a valuation (which involved a great amount of labour) would be at the close of the current year, and the next balance-sheet would show precisely what Mr. Harrison suggested.—The report was then adopted unanimously.

Mr. Alderman Lawrence, and W. Cook, J. F. Pawson, J. D. Sampson, and W. White, Esqrs., were re-elected directors of the society.

Mr. ELLIS moved that Mr. Tomlyn now be added to the list of auditors.

Mr. Cox seconded the motion, which was passed unanimously.

Messrs. Bagshaw, Serrell, and Tomlyn, were then elected auditors.

Mr. Cox said, that nothing gave him greater satisfaction than to find that they were progressing so favourably; it was much more so than could be expected, looking at the competition now carried on against this society.

He trusted that with such a body of directors, and a report so satisfactory, there could be no objection to the resolution he was about to propose, which was, that the remuneration to the board of directors and auditors for the past year be allowed, as provided by the Deed of Settlement.

—Mr. TOMLYN seconded the motion, which was passed unanimously.



Mr. FISHER then moved, that the cordial thanks of the meeting be given to the chairman and directors for their attention and services in promoting the interest of this society.—Mr. BOURNE seconded the motion, which was agreed to unanimously.—The meeting then separated.

#### THE NATIONAL PROVINCIAL BANK OF ENGLAND.

The annual general meeting of proprietors took place, at the bank establishment, Bishopsgate-street, on Thursday, the 9th inst.

JOHN LAURIE, Esq., in the chair.

Mr. D. ROBERTSON, the general manager, having read the advertisement convening the meeting,

The CHAIRMAN said, before proceeding to the immediate business of the day, he would just trouble them with a very few words. That was now the third time that he had had the honour of occupying the chair; and he was happy to say that, during the period of his connection with the establishment, he had always beheld it in a course of increased prosperity and success. It was hardly necessary for him to allude to the financial circumstances which characterised the past year, for they had been touched upon so very frequently by writers defending or attacking those financial measures introduced by the Government. He might, however, say that what occurred then was hardly ever known of in the commercial history of the country; for they had last year a great abundance of money, whilst there existed a complete, or very great, absence of all speculation and enterprise. Under these circumstances, they might have looked to more home activity; but that did not occur to any extent, for they saw the deposits of the bank continually increasing, and causing much anxiety to the directors how to employ them. Their establishment was situated in this position, which was peculiar to themselves, for they had money in great masses, the deposits being chiefly confined to the rural districts of the country, where a moderate and steady rate of interest was looked to in preference to any dependence on the rate of money in the market; the consequence was, that in late years, when money was not so abundant, these depositors continued to keep their money in their hands, by which they enjoyed all the advantages which the possession of large resources enabled them to retain. This bank had now been in existence about 17 years; and, by this time, all the objections which had existed at its origin, as well as the difficulties such a great undertaking was liable to, might be said in a great degree to have disappeared. One of their objections was that they could not control their very distant branches; but every year had enabled them more and more to overcome the difficulties of time and space, so that places which were formerly distant many days' journey, now appear little more removed than some of our suburban villages; whilst that beautiful invention—the electric telegraph—brought the most distant towns almost within talking distance. All these advantages enabled the board to exercise much greater power over their branches, and had, consequently, done away with any objection on that score to this institution. Since he had the honour of being connected with the establishment, he had always been able to bear his testimony to the very great spirit of liberality which existed amongst the whole board in the distribution of the moneys of the bank; and another advantage to the public was, that the directors never acknowledged either private friends or private acquaintances in their business operations. (Applause.) He was true that he, having once possessed a private bank of his own, knew as friends some of the customers of the bank; but that only related to himself; he, consequently, thought this was one of the most important and agreeable features of the institution. (Hear.) The board had some difficulties in the past year to contend with; but, by a deal of good management, and the assistance of his honourable friend on his right (Mr. D. Robertson), they had been able to steer the ship through all danger tolerably well; and he thought the directors came before them this year with quite as good a show as any of them could ever have expected.

The following report was then read to the meeting:—  
The lapse of another year brings the directors before the proprietors with their 17th report upon the management of the bank for 1849. The condition of the different interests upon which banking results mainly depend, for 1849 of the condition of a mixed character. At the commencement of 1849, considerable activity was felt in the manufacturing districts, which benefited, at a later period, by the stimulating influence of an abundant harvest, and at the close of the year the public returns exhibited an increase in almost every article of our export trade. Upon the whole, therefore, the last year appears to have been one of prosperity in the manufacturing localities. On the other hand, however, the condition of the home trade, in many of its branches, has been unsatisfactory. The exhausting effect upon the financial resources of the country, produced by the undue direction of capital to railway undertakings, to a large extent, as yet unproductive; the unsettled state of the political horizon, the uncertainty attending the operation of new commercial laws, the depression in agricultural affairs, have all tended, more or less, to depress the energy of internal trade, and to discourage local enterprise. Another distinguishing feature of the year has been a continuous and unprecedented influx of bullion, the effect of which operating concurrently with the inactive condition of domestic trade, has led to an accumulation of unemployed capital, and to its usual concomitant, a low value of money. But although contending with the disadvantage of a reduced rate of interest, and with other circumstances unfavourable to the success of their labours, the directors are happy to state that the general result for 1849 shows an improvement, as compared with that of the previous year; and in presenting to the meeting the annual summary of the year's operations, the directors have the satisfaction of adding, that on no occasion have they met the proprietors with stronger proofs in their possession of public confidence, or with more encouraging prospects of lasting prosperity. The yearly summary is as follows—viz.:

1849—Jan. 1.—Amount of undivided profits .....	£91,087 1 7
Dec. 31.—Net profits of 1849, after making allowance for bad and doubtful debts, and for a proportion of preliminary expenses ..	30,135 4 5
	£121,222 6 0
Deduct dividend on company's stock, for 1849 .....	24,549 16 0
Leaving undivided profits at 31st December, 1849 .....	£96,672 10 0

The following directors go out of office by rotation:—Sir John Campbell, J. Kingston, Esq., and John Laurie, Esq.; but, being eligible for re-election, offer themselves accordingly. Since last meeting, a vacancy has occurred in the direction by the death of Horace Twiss, Esq., to supply which the following qualified proprietor has offered himself as a candidate:—The Right Hon. Lord Ernest Augustus Charles Brudenell Bruce, M.P.

The CHAIRMAN then moved that the report be adopted and printed, and circulated among the shareholders.

Mr. W. BROWN, in seconding the motion, said he had been exceedingly gratified to hear what had fallen from the chair—the proprietors as a body must feel gratified at the circumstances alluded to. The course which was pursued in 1847 and 1848 was such as to secure great confidence in the branches emanating from this establishment, by the prompt assistance which parties had received, and by the assistance rendered to the agricultural interest. Losses were then sustained, which, however, were met by general profits, and by the re-investment of capital at as low a figure as that at which they had sold out. It had laid the foundation for the prosperity arising out of the establishment of branch banks. There was one point which he would venture to allude to, in which he thought they did not keep pace with other banks of the same character, with regard to the undivided amount of profits amongst the shareholders. He should be happy if the directors would condescend to take into their consideration the necessity of putting a limit to the "rest," as it was termed, so that when it exceeded a certain sum the proprietors should receive an increased dividend or bonus. He did not think they were called upon to follow the example of the Bank of England by carrying up the "rest" to 3,000,000, or 4,000,000, because he considered that that company was placed in a very different position from the Bank of England stock proprietors. It was necessary that the Bank of England should have a large "rest," because they could not call upon the proprietors of stock to contribute one shilling beyond the amount of their stock. He trusted the subject would have the consideration of the directors.

Mr. A. J. VALPY asked whether it was not understood that the "rest" was intended chiefly to equalise future dividends in case of short comings in future?—The CHAIRMAN said, yes.

Mr. A. J. VALPY: Might he ask how much the directors meant to make the "rest"? He thought the time had come when they should determine this?

The CHAIRMAN thought that the very essence of prosperity in such institutions as this was the existence of a perfectly good understanding between the shareholders and the directors; indeed, without that they could not flourish. (Hear.) Therefore, he need not say on behalf of the directors, that they felt great obligation to the shareholders for any suggestions they made to them, and he need not say that the subject which had been alluded to by the two hon. gentlemen would meet with their serious consideration. He had no right, on the present occasion, to express the feeling of his brother directors; he could only express his own individual opinion; but this he might say, in his individual capacity, that he thought the time had hardly arrived to consider the subject raised by the hon. gentleman who had seconded the resolution, and by the hon. gentleman who last spoke. They must remember that there was a great difference between their society and the Bank of England. The Bank of England had been established for a period of 150 years; the Provincial Bank had been in existence only 17 years; he thought, therefore, they must take care indeed to consider public opinion, and that they could not do too much to meet the public wishes, which ran, or appeared to run, in favour of re-

served funds. He thought that so many of their transactions related, especially their deposits, so much to rural population, that it would require a most delicate management. He had had a good deal to do with them, and he knew how important it was to retain their confidence, and everything which tended to that end was in the highest degree important. He expressed his individual opinion, but he would suggest that the proposition of the hon. gentleman was a little premature. He would, however, undertake that the subject should be brought before the directors, and should meet with that anxious attention which any suggestion made by the hon. gentleman always had and always would meet.

The Rev. J. GRAY said, a suggestion had occurred to him with regard to this subject. He thought, if he was right, that some years ago the directors considered it advisable that they should reduce the dividend. Now, he had lived many years in country districts, and had been well acquainted with the proceedings of the branches of this establishment, and had the means of knowing the feeling which prevailed when that occurrence took place, in the country parts. In the country, people had not access to the state of the money market, as gentlemen in town had, and, therefore, they only took their ideas from seeing statements which were put before their eyes. No doubt all would be glad to receive a larger profit on their investments, but they would forego the excess of interest, should the affairs of the country again take such a turn as had been stated—the political horizon and the money horizon not being very stable—should such an emergency occur again, as to induce the directors to have recourse to another expedient of this kind, he thought it would have a prejudicial effect on the country generally; and he would tell those gentlemen who understood this thing better than he could be supposed to do, or to pretend to—he should be sorry to see the directors consider it advisable to take anything from the "rest" to make up the usual rate of interest, and far less should he like to see the present interest decreased, when any pressure on the country or on the banking interest should unfortunately take place. And, therefore, though they might all be wise in their own way, they could not be such good judges as the board of directors, who might be said to be at the very port of information on the matter. He thought they would do well to leave these matters to the discretion of the directors.

Mr. WILLIAM BELL said that the amount of undivided profits was only capital employed in the general transactions of the bank, so that the shareholders were not prejudiced.

Mr. WILLIAM BROWN said that this bank possessed great advantages over other joint-stock banks; they had not only a capital subscribed, but they also had the benefit of the circulation of the country. Nothing could exceed the security of this establishment.

Capt. WARREN, as one of the oldest shareholders, thought they should not go so far as the Bank of England in respect to the "rest"; they should not go to the extent of 3,000,000. (A laugh.) He thought, certainly, that the "rest" should not be touched for a considerable period. He knew that, in the part of the country where he resided, confidence was much strengthened.—The resolution was put, and carried unanimously.

The CHAIRMAN stated that three directors, went out by rotation.

Mr. EDWARD STEWART bore testimony to the efficient services of those who went out of office by rotation. The conduct of the chairman that day must satisfy them as to his capability to render the most valuable assistance to the establishment, and he might say the same of all who went out of office. He moved their re-election.

Capt. WARREN seconded the motion, which was carried.

The CHAIRMAN, on behalf of his brother directors and himself, returned thanks, and assured the shareholders that their best energies would be used to merit the continuance of their confidence.

The CHAIRMAN moved that the vacancy in the board, caused by the lamented death of Horace Twiss, Esq., be filled up by the election of Lord Ernest Bruce, M.P. This proposition was one which had been brought forward on his own responsibility. After eulogising the character of the noble lord, the hon. gentleman moved that he be elected.—Mr. W. J. MAXWELL seconded the motion most cordially.

Mr. WILLIAM BROWN hoped the noble lord would render the society a valuable service, and would attend the meetings of the board.

The motion had been put and carried, the CHAIRMAN returned thanks on behalf of Lord Ernest Bruce, and read a letter from the noble lord, stating that he was compelled to decline a select committee of the House of Commons on the postal communication between London and Dublin.

Mr. R. BELL said, that being the case, the directors at the board, where he had the pleasure of devoting his services for 16 years, he could bear witness to the great ability, sound judgment, and excellent temper, which had always been exhibited on the part of their respectable manager, Mr. Robertson. (Hear, hear.) He would, therefore, move that the thanks of the meeting be given to that gentleman for his valuable services in the past year, and to the other officers of the establishment.—The motion was seconded by Mr. BROWN, and passed unanimously.

Mr. D. ROBERTSON (the general manager) returned thanks, and said it would be out of place for him to speak of himself; but he felt it his duty, as chief officer of the establishment, to bear witness to the great zeal he saw displayed on the part of all the officers of the bank. (Hear.) The country managers had now acquired great local knowledge, which enabled them to conduct the business of the bank in their several localities with increased safety; and with this experience, with larger resources, and with the confidence of the public, which they now possessed in an eminent degree, all they wanted was peaceable and better times to enable them to realise all the proprietors expected from this great undertaking. A vote of thanks was then passed to the chairman for presiding, when the meeting separated.

### Mining Correspondence.

#### BRITISH MINES.

ALFRED CONSOLS.—The 70 fm level is driven 7 fms. 3 ft. east of Field's engine-shaft; the 100 fm level is driven 4 fms. 4 ft. of which is very good for copper ore, worth quite 50¢ per fm., and the appearance of still improving—this is a splendid looking lode. We hope to be able to resume the sinking of the winze under the 60 fm level very shortly. The stopes in the back of the 60 fm level, east of the engine-shaft, are looking extremely well; at this point we have not yet seen the south wall of the lode. We have just resumed driving of the 60 fm level east, and are glad to say the lode here is improving, and very soon it will be as good as the stopes referred to. In the different levels, driving the course of the lode is large, and producing a small quantity of copper ore. We hope to commence sinking Field's engine-shaft, under the 70 fm level, next week.

BARRISTOWN.—The lode in the 30 fm level east, on east and west side, is about 1 ft. wide, with a good branch off about 3 in. wide on the north wall. The lode in the stopes behind this end, in the bottom of the level, is producing about 10 cwt. of lead per fm.—It looks better towards the mine. The winze which is now sinking on the side, to enable us to communicate with the 40 fm level quicker, is stripping the east and west side, which looks well to the bottom of the winze. We have a change of ground in the cross-cut, driving north from the western level, which I think favourable for the lode. The new lode and we were obliged to suspend for a short time, till we have a better way of discharging the stuff from it. In the 36 fm level end, on the east and west side, which we have driven a few fms. to enable us to sink a winze to hole to the stopes in the back of the 30 fm level for ventilation, the lode looks very promising, about 18 in. wide, with good branches of lead throughout. The stopes in the back of the 30 fm level are poor at present. In the 40 fm level cross-cut, south of Slob shaft, we have driven through the black ground, and the end is now in the division of the two channels of ground, and, consequently, near the lode.

BEDFORD UNITED.—In the bottom cross-cut the ground is still hard, which prevents the men making the progress we could wish. In the 90 fm level, the lode in the eastern end has not been taken down since my last report; the ground is tolerably easy for driving. In the 50 fm level we have cut through the lode, and find it contains some ore, but not rich; there is good lode over this end, in the bottom of the 70 fm level, and we may expect, from this dip of the ore, to reach it in driving a few fms. further east. The lode in the 70 fm level has been cut through, and I am happy to say presents a very encouraging appearance. It is 24 ft. wide, with good stopes of black and yellow ore, all saving work. The north-east cross-cut, in the 47 fm level, is progressing favourably, and during the past month several small strings of ore, and some veins of lead, have been met with. The lode in the bottom of Andrew's winze, sinking under the 103 fm level, is producing saving work; there is of very good quality, and we may expect a very early improvement. The cross-cut north, in the 103 fm level, has not yet been extended to the lode, but we expect to do it in the course of the present week. The lode in Bray's winze is about 3 ft. wide, and worth 35¢ per fm. The tribute department is in a healthy state, and enables us to keep up our usual returns with ease, and affords every prospect of a long continuance. The water-wheel was set to work on Saturday last, and I am much gratified at its general appearance, and the very able manner in which the whole of the work has been performed. The produce of the ores sampled on the 26th April, as made by our assayer, is 104.

BIRCH TOR AND VITIFER.—The lode in the old engine-shaft is improved since my last report; it is 18 in. wide, and producing good stones of tin, and the ground is good for sinking. We have sunk 4 fms. 3 ft.; the lode in the bottom of this shaft is a very promising one, and I believe we are not far from a good lode of tin. We have not been able to work in the depth level, west of this shaft, in consequence of so much water falling through the old workings; we have now 10 fms. of water above the back of this level at its present point. We have sunk a new winze-shaft 9 fms. below surface, but cannot go any deeper, on account of water. The depth of this shaft to the adit level will be 19 fms. The greatest part of the water that was going down to the 8 fm level is taken up in the adit level, which enables us to sink without any hindrance in the old engine-shaft. In the 20 fm level, east of Dunstan's shaft, the lode is still small, but is producing good stones of tin. The stopes in the back of this level are looking better. The stopes in the back of the 10 fm level are also improving. We have finished the plat

at Dunstan's shaft, and put in the tram road in the 20 fm level, west of Dunstan's shaft. The ground in the cross-cut north, in this level, is still favourable for driving. We have not yet cut the south lode in the 20 fm level. The men that took the end to drive were strangers to the ground, and have made but little progress.

BODMIN CONSOLS.—The lode in the south adit is looking well—large stones of lead, mixed with carbonate and arsenate of lead; this looks well for a 12 in. level. We shall soon return lead; it is now producing half a ton per fm.

BYRN-ARIAN.—The engine-shaft is now down 6 fms. below the 10 fathom level, the ground favourable for sinking, in a lode 6 ft. wide, containing several small branches of ore. The lode in the 10 fm level, driving east, is from 5 to 6 ft. wide, with a mixture of ore throughout the lode, but not rich; the rise in the back of the same level west is communicated with the winze sunk from the level above, and we shall commence driving this end immediately. We expect to hole the shaft on the Pemsam lode to the working on the Bryn-Arian lode, in the deep adit level, in about a fortnight. The stopes under the deep adit level, east of the engine-shaft, is yielding about 15 cwt. of ore per fm.; the stopes west of the engine-shaft, under the deep adit level, is yielding 14 ton of ore per fathom. We have commenced dressing the alines, and from appearances at present, will turn out equal to our expectations.

CALLINGTON.—The lode in the 125 fm level north is without any material alteration, still small and poor; the lode in the 125 fm level south is about 5 inches wide, producing 3 cwt. of silver-lead ore per fathom, with every prospect of a speedy improvement. In the 112 fm level south no lode has been taken down since last reported. In the winze sinking below the 100 fm level south the lode is producing saving work. The ground in the diagonal shaft, sinking below the 100 fm level, is not quite so favourable as last reported. In the 112 fm level north, at the south mine, the lode is 3 inches wide, producing work of a coarse quality. We have commenced a winze to sink below the 112 fm level south, to ventilate the level below; this being done, we expect to set some tribute pitches to advantage. At Kelly Bray we have completed the casing and dividing the shaft, from the 30 to the 40 fm level, also cutting pit, &c., and shall commence sinking to-morrow below the latter level. Our last parcel of silver-lead ore, computed 42 tons, sold to T. Somers, Esq., realised 197 11s. 6d. per ton.

DEVON AND COURTENAY CONSOLS.—The sumpmen are working well in sinking the engine-shaft; but the ground is unproductive. The lode in the 50 end has been taken down, the ore is not at present worth saving. There is no change in the 40 end west, on the gossan lode, since my last; neither is there any alteration in the pitch to notice, excepting the pitch in the bottom of the adit level, which is looking well. They have sunk about 6 ft. under the level, and at this time the lode in the bottom of the sink will produce 14 ton per fm. of ore, and in good ground; if it had been thrown open by sinking, driving, &c., it could be ore, away for 40s. per fm., which I hope are long will be done. We have a good mine there, that needs nothing but exploring. The men are working early and late, from which you may judge that they are aware of the value of their pitch.

DYFNWGM.—The 32 fm level cross-cut is set this day to seven men; we have driven 3 fms. 2 ft. 9 in. last month—the ground is eased and price lowered; it is fully expected to intersect the lode in about 6 ft. more. In the 23 fm level east we have formed a communication with the winze; this part of the mine is now well ventilated, but shall not continue to drive this level for a short time. In the new winze, below the 23 fm level, I propose sinking with all speed, not only to ventilate this part to the 32 fathom level, but also to open good stopes both east and west. At David's stopes the lode has improved very much within the last month; I have set it to-day to four men, with a view of raising a good heap of lead this month. In Tudor's stopes there is but little alteration since last reported on. We have now got our new drawing machine in good order, and we shall soon be able to clear this and the other stopes in the 23 fm level. The ore under the sink steel ore remains unproductive; the air is so bad, the men can hardly work at all; I have set it to two men, and trust, as soon as the level is clear, we shall get on better. We have formed a communication with the winze in the bottom of the adit level, and have set a new stopes to four men; the lode is large, and ore throughout. Jones's stopes have, within the last week, somewhat deteriorated, but changes of this kind will often occur in large lodes so near the surface. In the dressing department, I am sorry to say, we have got on slowly, owing to the inclemency of the weather—up to this morning the frost has not left us. We shall commence bringing down the ore from the east level, as soon as the level is clear. All the ore is brought down from Jones's stopes, and we intend clearing all the other places as quick as possible.

EAST CROWDALE.—At the middle shaft the lode has improved a little since my last. At Harris's shaft the lode is poor. In the 28 fm level east the lode has improved. We shall reach the point opposite Harris's shaft by the end of next week, and commence cross-cutting north. Our tribute pitches are looking much as usual. We hope to sample at our usual time, say, 10 to 12 tons. Our dressing apparatus will be fixed by the end of next week at Crowdale-field, for dressing the alines.

ESGAIR LEE.—The cauter lode in the deep adit, west of the junction is a little improved since my last report. The cauter lode in the 12 fm level, east from the surface, is much the same as for several weeks past—looking promising, and will yield about 20 cwt. of ore per fm.; the same lode in the winze, a few fathoms behind the adit, is from 4 to 5 ft. wide, yielding about 1 ton of ore per fm. The lode in the stopes, in the bottom of the shallow adit west of Morgan's winze, is improved since my last, yielding 15 to 20 cwt. of ore per fm. The winze will be fixed in the west pit to-day.

HEIGSTON DOWN CONSOLS.—The lode in the 35 fm level, east of the cross-cut, is 3 ft. wide, carrying a good leader of copper ore; in the 35 fathom level cross-cut towards the south lode, we have unexpectedly cut a large capel, with good spots of yellow copper ore disseminated throughout the same. The cross-cut south of the winze, in the 45 fm level, is without important alteration, as also the east level of the adit winze.

HENNOCK.—The engine-shaft is down 10 fms. 5 ft. 6 in., and I find the lode to be coming out in the shaft, so that I shall only sink 3 feet deeper, and then cut through the lode, and drive north and south on its course. The men in the adit level are still driving east to cut the eastern part of the lode, and the other men are cutting through the lode at the south winze-shaft. The lode is hard, but producing some good stones of lead, zinc, and gossan.

HERDSFOOT.—There is a considerable improvement in the south part of the stopes. In the 82 fm level the lode in the end is worth full 20 cwt. of lead per fm.; the stopes also, in the back of this level, are looking better than usual, and the others are yielding rather more than an average quantity of ore. The next sampling will take place about the 15th instant, by which time I expect the ore raised last month will be dressed, and the quantity will be about 80 tons, of full average quality.

HOLMBUSH.—The lode in the 182 fm level, west of the diagonal shaft, is still split in small branches, and we believe it will be found as such until we get clear of the small cross-courses, when we expect to meet with the shoot of ore, as seen above, but which we are obliged to suspend, until drained by this level, when it will set at 54, in 14. The lode in the 120 fm level south is 6 ft. wide, composed of quartz, prisms, and stones of lead—opening tribute ground. The ground in the 120 fm level cross-cut south, towards the flap-jack lode, is greatly improved; such beautiful white spar, and soft killas, are seldom seen as the end now presents, in which are found rich stones of lead. Let it be remembered we are carrying 1 ft. of the eastern side of the cross-courses, in which the lead is found; but there is no regular branch or lode of it, such as the lode in the places, in the same cross-course, in the adjoining mine. The flap-jack lode in the 100 fm level, east of the great cross-course, is 18 in. wide, composed of soft killas, spar, mica, and stones of copper ore. One of the pitches in the back of the lode is somewhat improved, set at 4s. 6d. in 14. We have sampled to-day a parcel of silver-lead ore (computed 30 tons), samples of which have been sent to all the lead smelting companies, to be tendered for ore or before the 15th inst., agreeable to circular.

KIRKCUDBRIGHTSHIRE.—In Stewart's shaft the lode is 6 ft. wide, a tender spar, with fine stones of ore through it. We have holed the 62 west to Keith's; the lode in the 52, west of Keith's, is 4 ft. wide, has a kindly spar, and a good branch of ore. The lode in the 50 end is very large, but not yet improved for lead.

LEWIS.—In the 80 cross-cut, south of sump winze-shaft, we have cut Cock's lode 6 in. wide, producing stones of tin; the south lode in this level, is 4 in. wide, unproductive; the north lode in this level, is 2 ft. wide, with a little appearance. Cock's lode in the 70, east of copper ore shaft, is 6 in. wide, worth 6¢ per fm. In the 70, east of tin shaft, on the north lode, there is no alteration since last reported on. Cock's lode in the 60, east of copper ore shaft, is 1 ft. wide, worth 7¢ per fm. Cock's lode in the 50, east of copper ore shaft, is 4 in. wide, worth 3¢ per fm.; the south lode in this level, east of sump winze-shaft, is opening tribute ground. Cock's lode in the 40, east of copper ore shaft, is 4 in. wide, worth 3¢ per fm.; in this level west lode is 6 in. wide, worth 4¢ per fm. The south lode in the 40, east of copper ore shaft, is 3 in. wide, with kindly appearances. Ralph's lode in the 30, east of copper ore shaft, is 3 in. wide, worth 3¢ per fm.; the south lode east, in this level, is 1 ft. 6 in. wide, worth 6¢ per fm.; in the same level west Cock's lode is 6 in. wide, worth 3¢ per fm.; ditto east, 4 in. wide, poor. The south lode in the 20, east of copper ore shaft, is 6 in. wide, opening tribute ground. Our sampling this month is 35 tons of tin.

NORTH BULLER.—Since we commenced operations here, six men have been cutting and opening the Buller shaft near 20 fms. from surface, on the course of the lode, and preparing to drive on it. The lode in the shaft, from surface down, varies in size from about 2 ft. to 24 in. in width, gossan back, with good stones of tin ore. This lode has been driven a considerable distance on the back for tin, but it is thought by most parties that it will make copper ore in depth. A quantity of copper ore has been raised from a sett to the east of this, on the same lode; nearly all the lodes in this neighbourhood make tin on the back. We have several other very promising lodes further south, and are about to sink a shaft 134 fms. south of North Buller shaft, on one of North Buller's lodes. The situation of this mine is good, being close by, and adjoining to, some of our most productive tin and copper mines. The strata in which the lodes are found are also very congenial to both copper and tin. Our surface work is getting on as fast as possible with the number of hands employed. The counting-house, blacksmiths' and carpenters' shops are up and covered in. We have had several men and horses carrying rubbish to make a road to come into the mine, which will be a very good one when finished.

NORTH WHEEL FRIENDSHIP.—The ground in Butler's engine-shaft is somewhat harder, but with scarcely any alteration in the appearance of the lode, it being composed of flookan and munda. In the rise, above the 24 fm level, the lode is 18 in. wide, producing good stones of lead. In the 24 fm level, north from the rise, the lode is 20 in. wide, yielding good saving work. In the 32 fm level, south from the rise, the lode is 18 in. wide, producing good work, worth 10¢ per fm. The pitches are looking fair, and I believe will remunerate the men for their labour. I hope to complete the crushing machine in the early part of next week.

PENZANCE CONSOLS.—Our prospects, at present, are more favourable than they have ever been. We have cut the north lode in Carthew's shaft; it is 2 ft. wide, worth 25¢ per fm., and in 3 ft. more Carthew's lode will be in with the north lode, and from 9 to 12 ft. the Standard lode will meet them, and there I think, from present appearances, that they will make one strong lode, where I believe that it will make a body of tin. I never had so good an opinion of the mine as I have at present, for I do believe, from present appearances, that the mine will stand for ages to come. Carthew's lode, going west, is greatly improved—3 ft. wide, worth 30¢ per fm.; and William Rave's pitch, on the north lode, is greatly improved, and worth 32¢ per fm. The south lode is also improved. We have cut a good branch of tin in the south adit, worth 24¢ per fm. William Rave's pitch, Thomas Harvey's pitch, and all the others, are much the same. You will perceive that, upon the whole, since the 30th April, we are greatly improved in our prospects, and which are brightening every day.

RHOSWIDDOL AND BACHEIDDON.—Prosser's cross-cut has been driven 34 fms. further north; there is no great change in it this month; I have let it to two men to drive on one of the lodes, in addition to two men driving the cross-cut. This lode for the present we will call the middle lode; its position is 28 fms. in the cross-course, and its course 30° south of east. We had some time ago driven 13 fms. on its course, and the end is now 20 fms. nearer the upper workings than any other point of Prosser's level. The distance under David's cross-cut will be about 103 fms., but at the 90 ft. it will be in the junction of the two lodes. Smiley level has been driven 1 fm. 3 in. further, along the lode, which continues ore in the back; 6 fms. of ore ground were stoped, and David's cross-cut was driven 3 fms. further south. The old Smiley level was com-



**WHEAL LANGFORD.**—Since my last we have gone through our copper lode in driving our cross-cut, north of Langford shaft, and find it to be 7 ft. wide, 3 ft. of which is good saving work for copper, which we shall begin to prepare for market as soon as water stamps are erected, which I hope to complete by the end of June. We have also sunk in the bottom of the same level, south of the silver lode, about 5 feet, and find the branch of silver ore still continuing to go down; we have broken a portion of it, and

**BODDAM MINES.**

One at port waiting for reasonable rate of freight (at present \$1. asked).—Tungkillo, out 100 tons; Montacule, 45 tons. There are many ships overdue, and daily expected arrive.—NORMAN CAMPBELL.

**LA. COMPANIA.**—In this mine we have set our south shaft perpendicular to a 10 fm. incl. and have commenced driving north to intersect the lode. The north shaft is sank out 8 fms., where the lode is 1 foot wide, producing very good stones of ore; we are sinking two winzes, both of which present a favourable appearance. From the above remarks, you will perceive that the quantities of ore broken in the present month is little, but, in some degree, to our being obliged to employ our men in these preliminary op-

Under the 17 ft. level, four men, at about 6¢. per ft. To sink Shaw's shaft under the 17 ft. level, four men, at about 6¢. per ft. In the tribute department we have received one part of men, and the other part, from the back of the 31 ft. level, to the arches between the second and third level, reducing the tribute to 10¢. per arbores for two months. The other pitches continue as before, to end of May, being less for two months. In the back of the 31 ft. level, two pitches, of four men each, at 24¢. less per arbores; one pitch, of 3 men, at 24¢. less per arbores; one Englishman and three labourers, at about 20¢. per ton. In the latter pitch the lode is very good and has a heavy yield. Since the 20th inst., and being now worth somewhat more than before, the men are not so anxious to mine. The Government is in the supply of powder for the Government stores here, and as this is the only authority of the Government (being a Government monopoly), I am obliged to await its arrival, not wishing to encourage any contraband dealing. The annexed account will show you what is lifted into, and out of, stock of dressed ore during the week, making altogether about 15 tons on the road, and on Tuesday we purpose loading 34 tons more for Seville; we are about to sink this quickly by other loading. The assay made for the Government by Don Francisco Gonzalez, on the 14th inst., showed 14 grs. of silver per quintal, which is about 1/2 oz. case per ton; this cannot, however, be called a good lode, as we have added much to the pile which was not previously dressed. I hope our lode for April will not fall short of 50 tons, the lode in Wilson's shaft having helped us.

### "A BEER INTO THE COST BOOK"

his last query I conceive to be the climax of the long-disputed *Greek question*; but as we have no High Admiral at command to coerce the inventive imaginations of "our sea attorneys," the public must look to you, the Editor of *Mining Journal*, for the solution of these sphinx-like riddles; therefore, we conjure you, Mr. Editor—you who are known to be learned in the laws of the "Medes and Persians," as well as in the laws and customs of mining, who can quote from the first lawgivers, Solon and Lycurgus, down to those



expounders of international laws, Erasmus, Vathek, or Puffendorf, of later date, to set us right on all these questions; or from the height of Mount Parnassus, to hurl some Greek fire into the stronghold of these shin-plaster scrip contrivances. As to "Puffendorf," alone he stands no chance against our modern practitioners.

On a late occasion, your correspondent, "Argus," enlightened me on these subjects, and, I remember, glanced at this same "W-L" as one of the innovations alluded to. Will he now allow me to recall him into life, that he may direct some of his hundred eyes to the far west, or that he borrow the great magnifying speculum of Lord Rosse's telescope, for the examination of those increasing hills of copper and silver at grass? But before he proceeds on this examination, I will take the figures of "H.M." and join "Argus" in a sporting bet of the 1000 to 50 against W-L—having returned the 1000L worth of ore, with an outlay of only 50L; and, further, that these said 1000L will not appear in the sale ticketings for May, or be divided among the scrip holders. Though the promised term is past for dividends, they will have to wait a little longer. Having thus, as in duty bound, brought these mining matters under your editorial cognizance, I defer to your superior experience, and the reflective consideration of your readers.—PAUL PRY: May 4.

#### LAMHEROEE MINE.

Sir,—In your last week's impression there appeared, under the head of "Notes to Correspondents," allusion to a communication, addressed to you by "A Shareholder," on the subject of the late assays of ore from the tin lode in the 60 ft. level at engine-shaft, and which, with remarkable good taste, you declined to insert, referring the "Shareholder" to a note appended to the weekly report of the mine, and intimating that the result of the assays would probably appear in your Journal. It is to fulfil this suggestion that I now take the liberty to address you.

The history of this tin lode, since it has been brought to light by the energy of the adventurers, is this—On 28th March last, Mr. A. Murray, jun., in a letter dated Tavistock, informed me of its discovery; and at the subsequent general meeting of the adventurers (28th March), he reported its value to be 25L gross, or 12L net, per ton, his opinion being founded upon three assays—by Mr. John Kornick, of the Ashburton United Mines, Mr. J. L. Jenkin, of Callington, and himself. The meeting, however, "to make assurance doubly sure," sent samples of the ore to Mr. P. N. Johnson and Mr. C. Binks, who reported that it contained a per centage of tin of from 3 to 4 per cent. only; whilst Mr. Murray's assays gave at least 3 cwt. to the ton of ore, or about 14 per cent.—an alarming difference. Mr. Murray thereupon waited on Mr. P. N. Johnson, an assayer of great eminence, and suggested the possibility of an error in the assay, but which Mr. Johnson would by no means admit. Mr. Murray then directed Capt. Tabb to send to various assayers in the country other samples from the lode (which in the lapse of time, whilst these proceedings were in progress, had much improved in quality), and the result of these second assays I beg to lay before you, for the information of the shareholders, together with the last report on the lode from the agent of the mine, and upon which comment from myself would be entirely out of place.—JAMES CROFTS, Sec.: London, May 8.

Assay-office, Callington, May 8.—Lamherooe Mine sample: produce, 14½ in 20.—J. L. JENKIN.

Ashburton United Mines, May 4.—I have carefully assayed the tinstuff: the produce is as follows:—3 cwt. 3 qrs. of tin ore per ton of tinstuff; produce of metal from the tin ore as above, 65 per cent. The metal is of exceptional quality, and will only be rated as common tin; but the quantity of tin ore in a ton of stuff is very satisfactory.—J. KERNICK.

Lamherooe, May 6.—I beg to hand you assays of lode in the 60 engine-shaft for tin which I am well pleased with, and hope this will be the means of doing away with doubts in future. In a month hence I shall have a few tons dressed for sale; we shall commence taking the lode to surface the latter part of next week. I have had another sample assayed; but it is not as yet arrived.—JOHN TABB.

#### LINARES LEAD MINING ASSOCIATION.

The first general meeting was held at the offices, New Broad-street, on Wednesday, the 8th inst., to receive the report of the directors, and for other purposes. THOMAS FIELD, Esq., in the chair.

The CHAIRMAN said he was sorry to see so thin an attendance of shareholders, but he hoped it implied the more confidence in the directors, and the prospects of the undertaking; still he found that about half the shares of the company were represented at this meeting.

The SECRETARY read the advertisement from the *Mining Journal* of the 27th April, and also the following report of the directors:—

##### DIRECTORS' REPORT.

This meeting is held in accordance with the regulations of the association, and being the first time your directors have had the pleasure of personal communication with their co-proprietors, they are happy in being able to state that the favourable reports and appearances which led to the formation of the company, have been fully borne out in the progress of the operations, details of which will be found in the annexed reports from the superintendent and the captain of the mines. It will, therefore, only be necessary on the part of your directors to lay before you an account of the progress of the work, and to endeavour to carry out the object for which the association was formed—that of bringing the Linares Mines into a state of profitable working, in the shortest possible time, and the smallest cost, compatible with the permanent interests of the proprietors.

The purchase of the concession of the mines having been completed, and possession obtained in conformity with the mining laws of Spain, Mr. Duncan Shaw, one of your directors, being in that country, immediately dispatched an English man, one of his employees, to Linares, engaged an interpreter, who is also clerk at the mines, and competent Spanish workmen, to prepare the necessary buildings for the engine, boilers, stores, &c., entered into arrangements with a mercantile house at Seville for the monetary transactions of the company, applied for and obtained an extension of the time limited for unwinding the mine, and rendered other important services to the association.

Meanwhile your directors entered into an engagement with Mr. Henry Thomas, and having satisfied themselves of his ability, practical experience, and general fitness for the appointment, they committed the entire management of the mining operations to his control; and under his advice, aided by the professional knowledge of one of your directors, they purchased a 30-inch cylinder steam-engine, in all respects equal to new, for a very moderate sum; but as any imperfection in the working of the boilers in Spain would have been attended with considerable difficulty and expense, and might have entailed serious consequences while under repair, it was considered advisable to have them entirely new, manufactured from the most approved principles, and the most approved materials, and also adapted for the consumption of either wood or coal, as might eventually be found most economical. The remaining machinery was purchased on very advantageous terms; and so complete and perfect were the arrangements made in providing the materials and stores that, although nothing has been found in excess, scarcely any requisite for the machinery has been since required, nor has the progress of the operations been on any occasion delayed by the absence of any article required in bringing the engine and pumping apparatus into effective work, and of the two boilers, provided either is equal to the work of the steam-engine.

These arrangements were completed in the course of the month of May, 1849; and Mr. Henry Thomas, with the approval of the directors, having engaged Mr. Matthew Curry as mining captain, and selected an engineer, a smith, and an efficient body of Cornish miners, proceeded to Spain to prepare for their reception, the men being embarked in the vessel conveying the machinery; the operations of the association were commenced immediately on their arrival at Linares, and have been continued uninterruptedly and satisfactorily up to the present time.

It may be necessary for your directors to state, for the information of some of the shareholders, the nature of the property held by the association, in order to their better understanding the considerations which must govern the directors in carrying on the operations of the mines, and realisation of the produce, either mineral or metallic. The mines are held under a legal assignment of a concession in perpetuity from the Crown of Spain, subject to a royalty of 5 per cent. on the mineral produce, and under the same conditions, as specified in the mining laws of that country. There are five ore, or cerise, lodes, of 200 yards, each, on the course of the lodes, by 100 yards in width, possessing the customary privileges for their exploration. The operations by former proprietors were carried on by manual and mule labour only, the drainage during the last period being attended by an expenditure of 7500L per annum, or about 20L sterling per day; yet under this enormous cost the mines yielded a large profit to their then proprietors, and returned from 300 to 400 tons of ore per month. Under the system now in use, the cost even during the process of unwinding the mine has not exceeded 20L per day for fuel, and 10L for wages and other expenses, while working engine 12 to 15 strokes per minute. But even taking this as an average cost, the difference in favour of the association would amount to 6953L per annum, or more than equal to a dividend of 37L per share on the entire capital. The investigations of Mr. Henry Thomas have confirmed the assurances of the miners now in the company's service, and who were employed in the mines at the period when the works were last suspended, that they ceased to be wrought solely on account of the increased influx of water, which rendered their work so laborious and difficult, that the men required a commensurate increase of wages. The drainage being consequently discontinued while the subject was in dispute, the resumption of the work was found impracticable. The samples of ore which have been received from the mines have been found on assay to yield from 72 to 82 per cent. of lead, containing from 8 to 11 cwt. of silver in the ton, and some ores, assayed by Mr. Shaw and Mr. Henry Thomas, have yielded 17 to 21 cwt. of silver to the ton—these being most probably select specimens. The appearance of the mineral is of a character which is considered to denote highly productive and lustrous lodes.

The mines have also yielded a large produce of copper to the former proprietors; but your directors do not feel warranted in any expectation from that source beyond the probability of its being met with as the mine progresses in depth. The most expeditious and economical conveyance of the ores from the mines to the shipping port has received the most attentive consideration, the usual conveyance being by mules, or asses, carrying 1½ to 2 cwt. each, about 20 miles per day, or by carts conveying 16 cwt., drawn by oxen; but as these latter are only fed by pasturing on the road sides during the whole course of their journey, their progress is only about seven miles per day. It is, however, hoped, that as the produce of the mine increases, and furnishing the carriers with a constant employment, a better and cheaper mode of conveyance will be available to the association. In order to ascertain how the produce may be realised to the best advantage, your directors have instructed Mr. Henry Thomas to forward about 100 tons of ore for shipment by way of Seville; and a similar quantity by way of Malaga, as from the stance of competition, and want of commercial enterprise in the Spanish smelting works, there is but little prospect of obtaining a fair price for the mineral in the locality of the mines. The first parcel may be expected to arrive in the ensuing month. The balance-sheet, which will be read to the proprietors, will show that the funds of the association are nearly exhausted; this arises solely from the circumstances that, while there are at this moment 150 tons of ore in store, and at surface, its disposal, at a fair mercantile price on the spot, is impracticable. It is satisfactory to your directors to find that, but for this fact, the subscribed capital would have been ample to bring the mine into profitable working. They are, however, compelled, in consequence of this delay in the realisation of the ore now in course of shipment, to call on the shareholders for a small further capital, to meet the monthly cost, not to explore the mine, but to render its resources available.

It now remains to be considered the amount, and in what manner this amount is to be raised. Were the mine worked on the Cost book Principle, we should, of course, propose a small call per share; but as this is impracticable, we are compelled to propose the

issue of a certain number of additional shares. What this number shall be is for this meeting to determine; but we are of opinion that not less than 500, or not more than 1000 shares, of 4L each, will be required for the development of the mines.

The amount of ore raised to the end of April, May, from the reports of Mr. Henry Thomas, he estimates at 150 tons, which may be expected to produce over and above the expense of carriage, freight, &c., 4000 0 0  
Assuming the return of ore continues at 50 tons per month, the produce for May and June (less charge) would be..... 600 0 0  
Total..... £1500 0 0

[The proceeds of the first portion, now in course of shipment, cannot, however, be expected to be realised, until (say) the end of June or beginning of July, after which, however, we may fairly calculate on successive receipts from this source.]

If, therefore, 500 shares are issued, payable 1L at once, 1L on the 15th June, and 1L on the 15th of July, we should receive in about two months from this source..... 1800 0 0

Total..... £3300 0 0  
Mr. Henry Thomas estimates the monthly cost at about 350L per month, say for April, May, June, and July..... £1400 0 0  
In England at 70L per month, including the portion of wages paid in Cornwall..... 280 0 0  
Timber, sacks, and expenses..... 220 0 0—2000 0 0

Leaving a balance of..... £1000 0 0

It must be remarked, that we have only calculated on the ore raised to the end of June, while the costs for July are not payable until August. It is probable, therefore, that the balance will more than compensate for any possible delay in realisation of the ore; and if this does not occur, it would be equal to the cost of August and September, payable in September and October, without calculating on any further proceeds from the mine before October. As the directors will be always happy to have the advice of the shareholders, they are not desirous of leaving more than 500 shares, without again calling the shareholders together; should this be necessary before the usual period in November next, and from the report about to be read, the shareholders will be able to judge whether this is probable or not. They are anxious to impress on the minds of the shareholders, that as men of business they do not base their calculations on any increased returns from the mines, however sanguine they may individually be on this subject; while it is next to certain that this question will be resolved before the amount now proposed to be raised can be exhausted. In issuing these new shares, they do not, they are happy to say, think it necessary to offer any great premium or preference; while in justice to those who do or do not share in the issue, some Ls. undoubtedly, called for; they propose, then, that the shares now issued shall be entitled to a preferential dividend of 10 per cent. per annum, and after payment of such dividend, shall be entitled to share equally with the 5000 shares existing, in any sum remaining to be divided. 17500 shares are issued, the shareholders will be entitled to take them in the proportion of one to ten now held by them; if 1000, to one in five.

The reports on the state of the mines, annexed, will show that the work has ceased to be a speculation, and that continuous produce and profits may be confidently reckoned on. The results of the present experiments will enable the directors to decide on the best mode for their realisation. In submitting the report now about to be read to the meeting, your directors feel it a pleasing duty to convey to their co-adventurers their strong sense of the efficient manner in which Mr. Henry Thomas has carried out all their wishes, and in which he appears to have been most ably and zealously seconded by Capt. Matthew Curry. In conclusion, your directors wish to express their entire confidence in the ability of the undertaking, and to assure the shareholders of the continuance of their best efforts for the general benefit of the association.

The following report, from Mr. H. Thomas and Capt. Curry, dated Linares, April 26, was then read:—

In compliance with your instructions, we beg to forward you the following general report on our progress, and on the present prospects of the mine. The operations of the association were commenced on the 15th inst., by pulling down the walls of the house containing the old malacate (or large horizontal drawing water), and by the arrangements for building the engine-house in its stead, as well as by commencing some of the other buildings—viz., the smith's and carpenter's shops, and storehouse. The machinery and materials were delivered in the mine during the months of July, August, and September, 1849. On the 1st of October we succeeded in getting the engine to work, the water being then down to the 17 ft. level; and in December, we were enabled to see the second, or 31 ft. level, to which depth only the engine-shaft sunk. As soon as possible afterwards we made arrangements for getting out the water to this level, by connecting chains and pulleys from the main rod to the nearest winze (San Gaspar); and at the time of writing this we are in hourly expectation of reaching the level, having cleared the winze, and drained the water for more than 12 fms. under the 31 ft. level. Below the third level are sinks and irregular workings for 10 or 12 fathoms deep, and for 40 or 50 fms. in length, being the part of the mine last wrought in. We shall carefully consider the most effectual means of unwinding this part of the mine after we have made the third level available, and with regard to the operations above the 17 ft. level, we have been successful in getting the water to the 31 ft. level, and in the mine, the 30-inch cylinder engine which we have, and with pumps equal to 64 inches in diameter, keeps the mine dry at 54 strokes per minute. The engine has lately been working at 12 strokes per minute, at which rate we have been draining the mine as fast as the rubbish could be cleared from San Gaspar winze.

Respecting each portion of the mine as the above operations have enabled us to examine, as well as that previously above the water-level, we have now the pleasure to send you the following account; and, first, with regard to the operations above the 17 ft. level, to which depth it was in the power of the miners to work without any draining apparatus. We have inspected the workings at, we believe, every accessible point on the course of the lodes. The traces of old workings are very considerable, from San Judas west to the fourth pertenencia of Pozo Ancho. On this line are several shafts, which we have examined, and ranged through extensive workings on lead ore, and for a smaller and we look forward to the time when we can examine these workings, being convinced that a large produce will thereby be made to the association. In the second, or 31 fathom level, we have also found the workings very large, and evidently to have been very productive for most of the distance down to the 31 ft. level, and from which, with other small arches, we have already seen below the 31 ft. level. We may calculate on continuing for some time our present raising of about 44 tons per month, independently of discoveries by titwork.

In the ground between the second and third levels, although our examination has been at present less extensive than it will be when we can get through the level, we have found the north lode almost entirely worked away, and judging from the value of the small arches remaining, we have no doubt that the lode is also directly above the 31 ft. level, and irregular workings, before alluded to, extending under the third level. The west of the engine-shaft, between the second and third levels, we have yet been unable to see; but we are informed they are not nearly so extensive as to the eastward. Being, however, also under a productive part of 31 ft. level, we hope to find that much good lead has been left therein for our use. At the points now alluded to, the conviction left on our minds is, in every respect, confirmed, that the mine ceased to be wrought by the last proprietors only from inability to keep out the water. With regard to the network at present in progress we have to remark, that the engine-shaft is only sunk to the 31 ft. level, and the point on the lode nearest the shaft is 10 fms. or rather more than 4 fms. and underlying a little to the north-west, or from the shaft. As the north and south lodes approximate in going down (the north lode dipping south), it is not unlikely that, at a greater depth, the case will be reversed, and the shaft be found well situated for reaching the lode. We have connected a large winze (Calevera), on the 17 ft. level, with the surface, and are now sinking it below the 31 ft. level, on the course of the lode. This shaft, thus connected, and which we have called Wilson's shaft, is now the deepest shaft direct from the surface to the mine, and will be the first available means of our drawing by whim from the third level. It is now down between 5 and 6 fms. under the 31 ft. level, and it affords us pleasure to report to you that, after sinking through some old workings, we reached a lode which for 6 feet sinking gave us a produce of between 10 and 11 tons for the length of the shaft (10 ft.), or between 6 and 8 tons per current fathom. At present it is worth about 10L per ton, and we have no doubt that it will be worth more when we are able to return to the lode, as we are informed it is not worked away beneath, nor at present are we aware of its length. We have provided for, in the size of this shaft, any arrangement we may come to for making it the shaft of the mine. It is distant from the engine-shaft, about 8 fms. only on the west. San Judas shaft is 32 fms. west of Wilson's shaft, and is now 7 fms. under the 17 ft. level. It is sinking between the two lodes, and is intended to command the western part of the mine. Shaw's shaft is 65 fms. east of the engine-shaft, and is now sunk to the 31 ft. level, with the surface, and are now sinking it below the 31 ft. level, on the course of the lode. This shaft, thus connected, and which we have called Wilson's shaft, is now the deepest shaft direct from the surface to the mine, and will be the first available means of our drawing by whim from the third level. It is now down between 5 and 6 fms. under the 31 ft. level, and it affords us pleasure to report to you that, after sinking through some old workings, we reached a lode which for 6 feet sinking gave us a produce of between 10 and 11 tons for the length of the shaft (10 ft.), or between 6 and 8 tons per current fathom. At present it is worth about 10L per ton, and we have no doubt that it will be worth more when we are able to return to the lode, as we are informed it is not worked away beneath, nor at present are we aware of its length. 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The following reports from the mines were read, and satisfactorily received:

**ENGINEER'S REPORT.**  
Everything has been done in conformity with the plan of operations laid down at the meeting in February. The engine is ready for erection, the engine-house within a few days of completion, the engine-shaft down to the adit level, and the whim-shaft within 4 fms. of also being so. We now await your further orders. I find it necessary to immediately erect steam stamps, as there is a large quantity of tin-stuff coming up from the mine that will pay well with steam, but not with our present water-power. We may also expect, within a month of starting the engine, of having nearly 20 pairs of tribulators at work, which will fully keep 34 heads at work. I herewith hand you an estimate of works necessary to be immediately done, amounting to 1300*l.*, also tenders from contractors for the same. The reports from our agent has been confirmed by our pursuer, who has been on the mine nearly a week, and just returned, bringing with him such specimens as will at once put at rest any doubt as to the productiveness of the lodes when explored below the adit. I also beg to hand you a valuable report, from Capt. Webb, manager of the Great Polgoth Mine, whose judgment on all mining matters is universally admitted conclusive. Our expenditure for the past month has been 518*l.* 7*s.* 7*d.*; making a total of 923*l.* 18*s.* 7*d.* from commencement.

**AGENT'S REPORT.**  
During the past month we have cleared a large quantity of ground, both east and west, above the adit level; we have several hundred fathoms of ground open in the ancient workings; the lode is entirely worked away in several parts of the mine for more than 40 fms. in length, and entirely up to the surface. There are occasionally a few small arches left to support the ground; this is found very good work when taken down. We have one pair of tribulators at the eastern workings, where they are taking away some very good tin-stuff, a sample of which has been brought to London by the pursuer, who has been entirely over the mine; the average of this work will produce 1*l.* 10*s.* to the 100 sacks, which may justly be said to be fair work. There are many stones which, on the leader part of the lode, will produce 6 cwt. to the 100 sacks, and many of them even much more. We have one pair working at the western part by three men, which looks very kindly. Our western whim-shaft is down 8 fms.; it is set to sink at 22 p*er* fm. Here we find the country a beautiful blue hills, with very rich stones of tin in the attic, which is evident proof the old men must have had rich and productive work. Our engine-house is up 4 fms. above the engine-room floor line, and the boiler-house up as far as the roof, except on the south side, which waits the arrival of the boiler. Should the weather continue fine, the walls of the whole will be up ready for the roof in a fortnight. I may say, since I have known the mine, I never saw it look more favourable. As soon as we have the engine and 24 stamps at work, the mine will very soon pay cost, and return a profit amply remunerative to the adventurers.

The following report has been received of Capt. Webb, of Great Polgoth:—  
May 7.—I have this day inspected the mine, and hand you the following report:—I find at the adit level three large tin lodes near the engine-shaft, but nearly all taken away above the adit level by the old workings; but wherever a piece of lode is seen in the old workings it contains good tin, and, from appearances, these lodes must have been found valuable. I observe there are lodes further south, which have also been explored on to a great extent, as deep as the former workings could go for water. I am glad to find you are erecting a steam-engine, to prosecute the mine in depth, which I consider to be a very desirable speculation. I have but little doubt but that large quantities of tin will be found, and that the mine will become a valuable and lasting property. A moderate capital employed economically will put the mine in a good state of working. Every operation is being carried on in a miner-like manner.

#### EAST WHEAL ROSE MINING COMPANY.

The usual two-monthly meeting was held at the mine, on Monday, the 6th instant, when the accounts were presented, showing—Balance of last account, 2633*l.* 4*s.* 5*d.*; sales of lead ore, 9314*l.* 13*s.* 2*d.*; copper ore, 1902*l.* 5*s.*; part proceeds of sale of lead ore on the 1st March, 1000*l.*; water charges, agency, &c., to Carrigill adventurers, 111*l.* 2*s.* 6*d.*; three-fourths share of profits, 212*l.* 14*s.* 8*d.* = 1346*l.* 10*s.* 9*d.*—Mine cost for January, 2330*l.* 2*s.* 7*d.*; ditto for February, 2144*l.* 10*s.* 1*d.*; miscellaneous charges (including 396*l.* 10*s.* 3*d.* on account of new machinery), 3792*l.* 14*s.* 7*d.*—By dividend of 20*l.* per share, 2560*l.*; leaves balance of 2633*l.* 12*s.* 6*d.* now in hand.

#### DEVONSHIRE GREAT CONSOLIDATED MINING COMPANY.

The sixth annual meeting of shareholders was held at the offices of the company, Barge-yard Chambers, on Monday, the 6th inst.  
W. A. THOMAS, Esq., in the chair.  
We are unable to give the director's report this week, in consequence of its length, but will endeavour to do so, with other information, in our next Number. By the report, it appears that dividends, amounting to 34,304*l.*, or 33*l.* 10*s.* per share, have been paid, and that the improvement in the standard of ore, which took place in the early part of the year, will enable the directors to declare an increased dividend of 9*l.* per share, or 9216*l.* in the present month of May. The balance of cash, ore bills, and Exchequer Bills, in hand on the 1st March last, up to which date the accounts are made, is 13,367*l.* 17*s.* 8*d.*; while the balance of assets over liabilities is 72,935*l.* 11*s.* 7*d.*, as will appear by the following financial statement:—

Balance-Sheet, from 1st March, 1849, to 1st March, 1850.

RECEIPTS.		EXPENDITURE.	
Balance from last account	£11983 7 6	Mines' cost, from Feb. to Dec., 1849, both months inclusive	£45397 7 1
Carriage of ore outstanding per last account, since received	702 19 11	Dues on ore sold, from Jan. to Dec., 1849, both months inclusive	7906 5 9
Sales of copper ores raised from January to December, 1849, both months inclusive	£9314 13 2	Remitted on account of mines' cost, for January, 1850	4500 0 0
Carriage of the above	£599 5 6	Water-wheel cost, to 1st March, 1850	5800 12 1
Deduct amount outstanding at March, 1850	772 3 0	Timber imported for use of the mines	799 0 6
Fees on transfers of shares and new certificates	13 14 0	Iron purchased for use of the mines	493 12 8
Interest on money lent	26 15 3	Agents' commission on dividends paid	857 12 0
Interest on Exchequer Bills	184 1 2	Salary of managing director at Tavistock, for one year to 31st Dec., 1849	600 0 0
Income tax deducted from dues on ores	230 11 8	Poor-rate and other taxes at Tavistock	1084 11 9
Gawton Quay, received in part re-payment of advances	164 17 6	Expenses in London:—Salaries of secretary and clerk, rent of offices, stationery, postages, printing reports, plans of the mines, solicitor's bill, and incidental expenses	£782 4 8
Total	£117,158 5 7	Compensation to directors and auditors to May, 1849	271 0 0
		Income tax, on dividends, to 1st March, 1850	1004 1 8
		Dividends paid, 23 <i>l.</i> 10 <i>s.</i> per share on 1024 shares	34304 0 0
		Balance:—Cash at the bankers in London	£3611 8 4
		Petty cash and stamps in the office	86 0 6
		Cash at Tavistock	200 0 0
		Bills receivable	9470 8 10
		Total	£117,158 5 7

General Statement of Liabilities and Assets, from 1st March, 1849, to 1st March, 1850.

LIABILITIES.		ASSETS.	
Balance cost for January, 1850	£21 11 2	Copper ores raised in Jan. and sold 21st Feb., 1850, and carriage	£2925 13 0
Cost for February, including merchants' bills, estimated at	4700 0 0	Copper ores raised in Feb. and sold 21st March, and carriage	11132 11 0
Dues on ore sold 17th January, 1850	£738 13 6	Copper ores at surface, less dressing cost and dues, 805 tons	5165 0 0
" 21st March, estimated at	850 0 0	Halvans at surface, less dressing cost and dues, 1700 tons	7426 0 0
Draft for iron purchased, due 4th May	500 0 0	Wheal Maria—Steam-engine and crusher, water-wheel, hauling machine, tramroads, pumps, sheds, &c.	4460 18 6
Income tax, six months, to Lady-day, 1850	501 13 4	Wheal Fanny—Hauling and grinding machines, wheels, tramroads, pumps, sheds, &c.	3292 16 6
Salaries, rent, &c.	400 0 0	Wheal Anna Maria—Steam-engine, with connections complete, tramroads, pumps, sheds, &c.	3826 2 0
Balance carried down	729 5 11 7	Wheal Josiah—Steam hauling engine, tramroads, waggon, sheds, pumps, &c., and large water-wheel and connections, &c.	7798 17 0
Total	£21,412 6 11	Wheal Emma—Steam-engine, capstan and shears, pumps, &c.	1956 2 0
		Wheal Thomas—Steam-wheel, pumps, &c.	240 0 0
		Wheal Fremont—Pumps, tramroad, water-wheel, &c.	773 12 0
		Timber on the mines and at the quays	1625 0 0
		Iron, coals, steel, brass, powder, sleeves, nails, rope, and other stores in stock	3596 0 0
		Fire-engine, &c., complete, 200 <i>l.</i> ; two horses, cart, and gig, 80 <i>l.</i>	280 0 0
		Counting-house furniture at the mines, 300 <i>l.</i> ; ditto in London, 90 <i>l.</i>	390 0 0
		Balance of advances for Gawton Quay	772 3 0
		Amount outstanding for carriage of ore to 31st Dec., 1849, as above	279 0 3
		Exchequer Bills in hand, 5000 <i>l.</i> —market value	5244 13 9
		Balance as above	13367 17 8
Total	£21,412 6 11		
Balance brought down	£72,935 11 <i>s.</i> 7 <i>d.</i>		

Mr. Hitchins, the gentleman under whose management these flourishing mines were opened out, having tendered his resignation of his office of superintending engineer, the same had been accepted; and, at his own request, he had been nominated by the directors consulting engineer and mine surveyor of the company, in which capacity his services will be at all times available to the company, should they be required.

No other application for the office of director having been sent in, the retiring directors were re-elected, as also the two auditors.

A report on the present state and future prospects of the mines was received, and by which it appears that a very considerable improvement had taken place in the mines, the ore in sight being 62,230 tons, amounting, in value, to the large sum of 892,049*l.*

A resolution was passed, placing at the disposal of Mr. Thomas Morris 100*l.*, to be applied for the promotion of education among the children of the miners who are employed at the mines.

After passing the usual resolutions, receiving and adopting the reports and accounts, re-acting directors and auditors, and voting thanks to the directors and officials, the meeting separated.

#### TRETHEVY COPPER MINING COMPANY.

A general meeting of shareholders was held at Exeter, on Monday, the 29th April.  
Lieut.-Col. THOMAS in the chair.  
It was stated to the meeting that the engine which is in course of erection would be completed in about six weeks. The balance-sheet showed a sum of 364*l.* 17*s.* 10*d.* in favour of the company, and the amount of costs, for March and April, was estimated at 337*l.* 19*s.* 6*d.*. A committee of management having been chosen for the next two months, a call of 10*s.* per share was made. The meeting was adjourned, for 14 days, for the purpose of forfeiting all shares on which the previous call had not been paid.

#### SOUTH PLAIN WOOD MINING COMPANY.

A general meeting of shareholders was held at the Oriental Hotel, Vere-street, London, on the 4th inst., and was very numerously attended.

THOMAS CAMPBELL, Esq., in the chair.

The accounts of the mine, from its commencement in December last, were presented and passed. The following is an abstract:—

Deposit on 980 shares	£380 0 0
Paid part purchase-money for the mine	£140 0 0
Lessors' solicitor for lease	51 4 8
Spirit level, and other instruments	9 0 0
Water-wheel	45 0 0
Expenses attending the formation of the company, and for	
Books, stationery, &c.	19 0 10
1849—December costs	55 0 1
1850—January costs	70 8 11
February costs	67 12 6
Subsidy to the men for March	18 0 0
" April	21 0 0
Balance in hands of committee	£483 13 0

The following report, from Capt. Collins, was read to the meeting:—

May 2.—We have driven west on the course of Nicholson's lode 28 fms. 2 ft.; the lode is from 5 to 6 ft. wide, and still improving; 4 ft. of the lode is saving work, copper of rich quality. Campbell's lode is 6 ft. wide, composed of gossan, mundie, peach, pryan, and spar, with copper very rich in quality—these are indications of a rich and productive mine. We have driven 10 fms., and sunk a winze 21 ft., also another 6 ft., and find copper of superior quality. Caunter's shaft, on Nicholson's lode, is down about 6 fms., and we have cut a lobby to take off the water, and I purpose putting in the engine forthwith. We have also sunk a shaft 19 feet, and holed through for air. We have driven the adit 17 fms. 3 ft., with very dead air. Todd's shaft is sunk 17 fms., and we find the lode productive, but are obliged to stop for the quantity of water. Collins's shaft, on the back of the main adit, is 3 fms. deep, with a lobby cut 14 fms. to unwater the shaft. I have also sunk out ground for floors to deposit the ore. The distance from Nicholson's lode to Campbell's is 53 fms.; from Campbell's to Jenkins's, 145 fms.; from Jenkins's to Collins's, 55 fms.; from Collins's to Eale's, 135 fms.; and all of a promising character. Also we have sunk 122 fms. of containing pit, and find all the lodes east and west.

#### LLWYNMALEES MINING COMPANY.

The usual two-monthly meeting of this company was held on Tuesday, the 7th instant.

Major M. COOPER in the chair.  
The minutes of the last meeting were read and confirmed. The reports, received since last meeting, were also read. It appeared that the balance at the bankers, including the sum received for the 39 tons of lead lately sold, was 427*l.*; calls due, 245*l.*—making, together, 672*l.*; while the liabilities were 412*l.*, and the balance in favour of the mine, 260*l.* Upwards of 10 tons more of lead were ready for market; and the mine being forked, it was believed that the returns would shortly be increased from the lower levels; 30 tons were expected by the end of May.

A SHAREHOLDER then proposed the following resolutions:—

1. That, as by the Cost-book System, the Committee of Management have no powers, or authority, except to carry out the wishes and orders of the general body of adventurers, resolved, that the adventurers do not acknowledge the principle laid down in Major Mose Cooper's letter to the pursuer, of 15th March last, but declare their right individually to authorize any agent to inspect the mine on their behalf, and at their own expense.

2. That Captain Henry Francis be informed that it is no part of his duties to write private letters on the mine to any individual adventurer, and that the pursuer be instructed to send him a copy of this and the previous resolution.

These resolutions were seconded by Mr. CAREW, of Lincoln's Inn-fields, and considerable discussion took place; but they were ultimately negatived.

It appears that great dissatisfaction exists among some of the adventurers, owing to the various reports circulated of the position and prospects of this mine. It was stated that one or two favoured individuals, connected with the management, are in the habit of receiving private letters from the captain, containing information not given in the reports open to the shareholders. For instance, it had been stated, accidentally at the last meeting, that the pursuer had received a private letter to the effect, that a branch of solid lead, 14 in. thick, had been cut, but which never appeared in the regular reports. It was admitted that these private letters had occasionally been seen; but not until sufficient time had elapsed since their receipt to have enabled their being used for jobbing purposes. It was not likely that those persons, who are so anxious to possess such advantages would be deprived of them, if there was any possible means of retaining them; so it will be very surprising that the committee of management, by resorting to the peculiar resources which all such bodies possess, succeeding in obtaining sufficient proxies to cause these resolutions to be rejected, by passing an amendment, a vote of thanks to the chairman, although in the whole, we believe, that only between 600 and 700 shares were represented at the meeting. It should be stated, that the letter from Major Cooper, alluded to in the first resolution, was to the effect, that no shareholder can authorize an agent to inspect the mine on his behalf, and at his own expense, without an order of the "board of directors."

[Some remarks on this meeting appear in a leading article.]

#### MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

**BODMIN CONSOLA.**—I am just returned from this mine, where they have a splendid lode—indeed, we have never seen anything so good before in this district—large stones of lead of the best character, arseniates and carbonates of lead, &c., in a large quantity. I am not a sanguine man in mining, but I think they will do well at Bodmin Consola.

**NEW EAST CROSDALE.**—We understand that about 600 shares, out of 1024, have been taken up; and that the sett will be shortly put to work; it is 200 fms. north of Wheal Anderson, and the lode is a continuation of one of the richest ever opened in Devon.

**WEST WHEAL TOLGUS.**—The reports from this mine are of a very cheering character. For the last fortnight, the communications received, from both captain and pursuer, have stated a gradual improvement, and the latest, dated the 7th inst., states that at 4 fms. below the adit the prospects still improve, and a fine stone of ore had been cut. The water, however, was very quick, and they would not be able to go much deeper without machinery to keep it in fork.

**THE CLARE UNITED SILVER-LEAD MINES.**—These mines—the Kilbricken, the Oughaville, and Carahan—have been purchased, with all the machinery, by Henry Crookford, Esq., of Queensferry, Flintshire, and are offered, it is stated, for sale at a price not equal to half the value of the materials on Kilbricken alone. This mine, during the last six months of active working, cleared above 2000*l.* profit; and a private circular has been issued by Mr. C. S. Richardson and Mr. Brand, the former secretary, in the hope of getting a few capitalists to take advantage of this promising adventure. It is proposed to raise 150*l.*, by 15 gentlemen at 10*l.* each when a careful survey of the whole property underground and at surface will be made, and a complete descriptive report published. The 10*l.* subscription to entitle the party to 25*l.* stock in the company when formed.

**EAST TRESCOLL TIN MINING COMPANY.**—This mine, to work which a company is now forming, is situated in the parishes of Lanivet and Luxulian, near Bodmin, Cornwall; held on lease for 21 years, at a royalty of one-fifteenth. It is stated in the prospectus to contain all the rich lodes of Wheal Trescoll, now returning some of the finest tin in the county, realising a high price in the market. A shaft is sunk, and one of the lodes worked upon, giving profitable returns; but the former adventurers having nothing but a small water-wheel, could not keep the water. The large engine now on Wheal Trescoll will, probably, render much less power necessary and it is proposed to erect a small engine, and get down to the 19 fm. level, when the mine is expected to be in a position to make profitable returns; and negotiations are pending for a considerable enlargement of the sett. The capital is 2500*l.*, in 1*l.* shares.

**NORTHERN COAL AND MINING COMPANY.**—Yesterday Master Blunt proceeded with the further settlement of the company's affairs, and of the list of contributors liable to defray the outstanding debts, reported by Mr. Quilter, the official manager, to amount to about 70,000*l.* The Master has intimated his intention of proceeding to make a call of 10*l.* per share, to pay the liabilities.

**BRITONFERRY IRON WORKS.**—Bad as the iron trade is at the present time, we are happy to find that this spirited force is in full work this week. Several old experienced hands have been engaged; and, under the able management of Mr. Jenkins, the place presents a scene of more orderly and active appearance than it has ever done heretofore. Orders are in to keep the work going, without any interruption, for the next 12 months. Mr. Scale, the proprietor of the works, has opened a school for the instruction of the workmen's children; and we understand that similar places of instruction will be opened at his other works at Cefnwc and Garth. Let ever iron and coalmaster "go and do likewise;" and we shall soon see our Courts of Justice will be less filled with juvenile offenders than at present.—*Carmar.*

**GIGANTIC KNOBS OF COAL.**—Early this week, four monster pieces of coal, weighing about 4 tons 8 cwt. each, rethed Newport from the Ebbw Vale Works, to be shipped abroad; by the way, would not these Leviathan black diamonds be worthy of inspection at the forthcoming Exhibition of the Industry of all Nations.—*Monmouthshire Merlin.*

#### LATEST CURRENT PRICES OF METALS.

LONDON, MAY 10, 1850.

ENGLISH IRON.		FOREIGN IRON.	
Bar, bolt, square, London	£45 0 0	Swedish, in bond	17 10 0
Nail rods	3 0 0	Block	3 17 0
Hoops	5 0 0	Bar	3 14 3 18
Sheets (angles)	7 5 0	Refined	4 5 0
Bars, at Cardiff & Newport	4 12 6 15	FOREIGN TIN.	
Refined metal, Wales	3 6 3 3	Banca, H. C.	3 13 3 15
Do. anthracite	3 10 0	Ditto, for Export only	3 11 3 13
Do. do. for	3 10 3 15	TIN-PLATES.	
Do. No. 1, Clyde	3 6 3 3 6	IC Coke	1 6 6 1 7
Blowitt's Patent Refined Iron	3 10 0	IC Charcoal	1 11 1 13
Do. do. for tin-plates, boiler	4 10 0	IX ditto	1 13 6 1 18
Stirling's Patent ? in Glasgow	3 13 0	SPELTEN.	
Toughened Figs in Wales	3 0 3 0	Plates, warehouse	per ton 14 13 15 5
Staffordshire bars, at the works	3 6 0	Ditto, to arrive	per ton 21 0 0
Figs, in Staffordshire	3 5 0	QUICKSILVER.	
Rails	4 15 3 0	English sheet	per ton 21 0 0
Chairs	4 0 0	QUICKSILVER	per lb. 4 <i>s.</i>
FOREIGN IRON.		TIN.	
Swedish	11 10 12 0	English sheet	per ton 21 0 0
GCND	11 10 12 0	QUICKSILVER	per lb. 4 <i>s.</i>
PSI	11 10 12 0	TIN.	
Gouffier	11 10 12 0	English sheet	per ton 21 0 0
Archangel	11 10 12 0	QUICKSILVER	per lb. 4 <i>s.</i>
FOREIGN STEEL.		TIN.	
Swedish keg	14 0 14 10	English sheet	per ton 21 0 0
Ditto faggot	14 0 14 10	QUICKSILVER	per lb. 4 <i>s.</i>
ENGLISH COPPER.		TIN.	
Sheets, sheathing, & bolts, p. lb.	0 10 0	English sheet	per ton 21 0 0
Tough cake	per ton 88 10 0	QUICKSILVER	per lb. 4 <i>s.</i>

Turns.—a, 6 months, or 2*l.* per cent. dis.; b, ditto; c, ditto; d, 6 months, or 3 per cent. dis.; e, 6 months, or 2*l.* per cent. dis.; f, ditto; g, ditto; h, ditto; i, ditto; A, net cash; B, 6 months, or 3 p*er* c*en*t. dis.; m, net cash; n, 3 months, or 1*l.* p*er* c*en*t. dis.; o, ditto, 1*l.* dis. Cold-blast, free on board in Wales.

**REMARKS.**—Since last week's *Mining Journal* copper has remained quiet. Iron continues flat, except Scotch pigs, which have advanced about 1*s.* per ton during the past week. In lead nothing doing; but spelter in demand at present prices—1000 tons having changed hands at 14*l.* 15*s.* per ton. Tin continues very languid. Tin-plates in good request.

**MONTHLY REPORT.**—IRON: We have had a dull market for all descriptions of iron during the month. Welsh bars are from 2*s.* 6*d.* to 5*s.* per ton lower, and for Staffordshire iron lower prices have been accepted. In Scotch pig-iron there has been little business done, and the price has scarcely varied. Sweden iron is without variation.

COPPER is unaltered in price, with a limited business.

TIN: English is without alteration. Foreign is nominally a shade lower, but holders generally are firm, at prices beyond those quoted.

LEAD is without change as to price—contrary to the expectation of a rise entertained at the commencement of last month.

SPELTEN: A moderate business has been done during the month, with little variation in the price, which we quote same as last month. The stock in London was 3466 tons on the 1st inst., against 1034 tons at same period last year.

LIVERPOOL, May 7.—Our market is more active than latterly, and some descriptions have commanded more money. In common bars a good business has been done, at 4*l.* 10*s.* in Wales, but at this figure there are now no sellers. In Staffordshire iron there has been more inquiry. Figs have been pushed up by the Glasgow jobbers to 4*s.* 6*d.* mixed numbers; but this advance, we are convinced, cannot be maintained, and we look for an early re-action. Accumulating stocks, declining home consumption, and almost total suspension of shipments must, sooner or later, tell upon present prices. In tin-plates, the demand continues good, and prices are well supported.

MANCHESTER, May 7.—There has been an improvement in the market for Scotch pig-iron in Glasgow, within the last few days, and mixed Nos. have advanced to 4*s.* 6*d.* to 4*s.* 8*d.* per ton, cash, free on board in the Clyde. With us the nominal prices obtainable are still out of proportion with the Glasgow rates, and for similar quality not more than 4*s.* 6*d.* to 4*s.* 8*d.* per ton can be quoted—indeed, there is still very little disposition to purchase manifested, but at the same time there is no weight of iron offering.

#### EXPORTS OF METALS TO ALL INDIA FROM LONDON AND LIVERPOOL, FOR THE FIRST FOUR MONTHS OF 1849 AND 1850.

Metals.	1849.	1850.	In. in 1850.	Dec. in 1850.
Spelter	1139	370	—	769
Copper	1678	1774	96	—
Iron, British	8699	12217	3518	—
Ditto, Foreign	629	165	—	464
Tin-plates	868	4874	2794	—
Lead	1095	777	—	318
Steel	250	374	—	86
Quicksilver	—	22	22	—

Spelter, 56 tons; copper, 334; British iron, 3244; foreign ditto, 2







## NOTICES TO CORRESPONDENTS.

\* \* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"A Reader" (Leeds).—The works can be obtained of Mr. Weale, 59, High Holborn.  
 "M." (Newlyn).—We do not know when the "Synopsis of the Cornwall Ticketings" will appear.—Address Mr. Polkinghorne, of the Fewey Consols Mines, St. Austell.  
 The Cornish Iron-works are near Newport, Monmouthshire.

WIRE-ROPE CONDUCTORS.—Mr. Andrew Smith writes to us on the subject of Dr. Murray's question, whether or not the last report to the Admiralty was not unfavourable to the wire-rope conductors, as far as used in the Navy? His answer is, that he is not aware of any such report, but a great number of ships were fitted with his patent rope as lightning conductors, and he never heard of a ship being struck when one of those wire rope conductors was properly fitted. As a case in point, he mentions that of the ship *Blackey*, of Liverpool, whose top-gallant mast was shivered during a thunderstorm, because the conductor had not been continued up that mast. Surely, when the conductor had saved all the other parts of the ship from the least injury, as the testimonial from the officers proves, it ought not to be considered defective. Mr. Smith observes, that such large and respectable owners and builders as Messrs. Wigram, of Blackwall, and Messrs. Smith, of Newcastle, and many others, whose East Indianmen are all fitted with his conductors, are tolerably good guarantee for their good qualities. He further says, the quantity of conducting surface on Dr. Murray's  $\frac{1}{2}$  in. tube is only 34 in.; while the conducting surface of a  $\frac{1}{2}$  in. copper wire-rope, containing 49 wires, 3-16ths in circumference, contains 94 in., or nearly as 3 to 1 in favour of the wire-rope.

"M." (Cornhill).—We are not aware that any progress has been made towards working the Brancu Gold Mines—certainly no report has been published in our Journal. A communication on the subject, with the writer's name attached, shall be inserted.

Mr. N. Ennor's remarks on Mr. Hopkins's work, *On Terrestrial Magnetism*; and "S. S." on the Silver Mines of Cornwall, shall appear in our next Journal.

The communication of "W. B." (Bedmin) is declined. We cannot notice any such proceedings: apply to a solicitor.

GREAT WHEAL FREDRICK.—In reply to the inquiries of our correspondent of last week, we are informed that this mine is at present unworked; that since the operations of 1846 an adjoining vein has been taken by the lessee, with the intention of more extended workings. For any further information, we must refer the parties to the purser, whose address is left with us.

WHEAL SAMSON CONSOLS.—In reply to inquiries as to the unusual constitution of this mine, there being "no calls, no liabilities, and no forfeiture of shares," we have requested the purser to furnish us with a statement of the rules of the company for effecting such objects, and have no doubt he will do so for our next week's publication.

"A Subscriber" (Austinfriars).—On iron there are two works, both to be had of Mr. Weale, of High Holborn—viz.: *The Manufacture of Iron*, by Frederick Overman, Philadelphia, U. S., 1850, and *Précis de la Fabrication de la Fonte et du Fer*, par Flachet, Barroillet et Petit, 3 tomes 4to, et un folio, et Atlas de Peintures, Paris, 1850. On copper and other metals it is very doubtful if any works exist in foreign languages, except what may be found in the various continental scientific periodicals.

Reviews of New Works.—Professor Ansted's *Elementary Course of Geology*, Mr. Cliffe's *Book of South Wales*, and Mr. Bouma's *Catechism of the Steam Engine*, shall receive attention in our next week's Journal, being necessarily omitted in our present number from press of matter.

PROF. ANSTED'S LECTURES.—We are compelled to postpone our reports of these interesting lectures, but will endeavour to insert the arrears in our next, and to continue them regularly in future upon delivery.

COLOUR OF THE SEA.—The colour of the sea is generally of a deep bluish green, which becomes clearer and brighter towards the coasts. The sea, however, is subject to remarkable changes of appearance, different shades—from the deepest indigo to green, and even to a slaty grey—being produced from the shifting sunshine or passing clouds. The colour in some parts depends upon local causes; thus, a purple tint is said to pervade the waters in the Gulf of Mexico, and in the Gulf of Guinea. In the Gulf of Guinea the sea is white, and around the Maldives it is black. Between China and Japan it is yellowish; and west of the Canaries and Azores it is green. Off California, the Vermilion Sea is so named from the colour it often assumes. At the mouth of the La Plata, the sea is of a reddish tinge; and of a similar colour in the Red Sea, whence its name. M. Ehrenberg asserts that the colour of the latter sea is owing to a species of *ocellularia*, a microscopic being, intermediate between the animal and vegetable kingdom.

"J. P." (Plymouth) and "G. P." (South Wales).—The address of Mr. Jasper Rogers is, Sanitary Engineering Office, 88, St. James's-street. The properties of peat and peat charcoal have been frequently referred to in the *Mining Journal*, in which, indeed, their advantages were first promulgated. In the *Journal* of the 11th August, we noticed the papers read by Mr. Rogers at the Botanical Society, and gave some particulars, which should be consulted to by our correspondents.

"G. E." (Kelvedon).—We are anxious to obtain reports from all mining companies, which we insert, gratuitously, for the information of distant shareholders. The despatches of the Santiago Mining Company will be as readily published as those of any other, when they are forwarded to us for that purpose, or we have permission to copy them. Our correspondent complains that, not having heard of the favourable news which occasioned the late rise in price, he sold his shares at a loss, when he might have obtained a premium.

"M." (Newport).—We have already stated that there were 165 companies provisionally registered during the past year, of which 10 related to California. Only 65 were completely registered in the year. In the period 134 failed to obtain complete registration, in which class the California companies are prominent parties. The amount of fees paid in the year was 2977l., of which 2891l. 6s. was paid at the head office in London, and the remainder in Dublin.

W. E. GILL (Truro).—We can imagine more ways than one how a syphon might be instantly applied, by bringing its lower limb over the land side into a culvert below the level of the bottom of the pontoon. We have no access to Mr. Mallet's paper, in which the whole arrangement is described at length; but as the bridge, valves, and syphon have been a considerable time successfully at work, there can be no doubt as to the practicability of the construction. It will, no doubt, be published in the *Zoologist*. A proprietor of a quarry in Scotland, a short time since, emptied the water from it, which was getting troublesome, by means of a syphon carried over its banks into lower ground beneath, to the small admiration or consternation of the quartermen who witnessed the feat, thinking it against the laws of Nature.

"G. S." (Cardiff).—The neighbourhood of St. Austell, Cornwall, is the great china earth district. We are not acquainted with any individual parties connected with the trade. We think our correspondent had better apply to Mr. John Hitchens, of Tavistock.

"An Inventor" (Dundee).—Read the specification of Mr. Horley's Improvements in Preventing Incrustations, and Purifying Water, published in the *Journal* of 27th Oct. Mr. Andrew Smith's Improved Steam Generator was described in the *Journal* of the 28th of July last.

"T. B." (Tavistock).—In further reply to this correspondent, who enquired respecting Wheel Anderton, we have been informed that at the ensuing quarterly meeting, to be held on the 28th inst., the forfeiture of the shares of those who have not paid the calls due on the 28th Feb. last, will be confirmed. Another matter should also be brought before the assembled proprietors—that of the propriety of having a regular report forwarded for insertion in our *Journal*; which, as communicating necessary information to out-adventurers, would prevent many enquiries being made, and the existence of much of the doubt which at present attaches to this, as well as other similarly managed adventures.

"M. W." (Cork).—1. Obtain Budge's *Miner's Guide*; Mitchell's *Manual of Assaying*; Collier's *Treatise on the Use of Relieving to Mines*; and our *Glossary of Mining and Smelting Terms*.—2. Read Mr. Mitchell's paper on the Cost-book System and the Stannaries, in the *Mining Journal* of 10th April.—3. Apply to Mr. P. N. Johnson, of Hutton-garden, or Mr. Mitchell, Hawley-road, Camden Town.

"J. J." (Brierley Hill).—We are not in possession of any further particulars respecting the new hydraulic engine alluded to in our notice of the Freddi Leachyrd Lead Mine, in last week's *Journal*. In a short time, doubtless, a full description will be forwarded for publication.

T. Francis (Durham).—The first discovery of the making of zinc from blende is said to have been by Galilei, who was demonstrator of mineralogy and metallurgy at Freyberg in the year 1750. His formula is thus given:—Take of blende, well pulverised and calcined in a strong fire till the smell of sulphur is all gone, 8 parts, and 1 part of fine pulverised charcoal dust—mix them well together, then fill a stone retort three parts full with the mixture; set the retort in a reverberatory furnace that gives a very strong fire, capable of fusing copper; apply a receiver to the retort with a little water; raise the fire by degrees, and let the mixture continue in it four hours, when the zinc will come over in metallic drops, and be found in flowers, both in the receiver and the neck of the retort; these flowers are to be collected, and together with the drops reduced to a regulus, in the usual manner, with charcoal dust; this regulus is the zinc. The same author observes, a work of this kind may be carried on at large by the same method, with some use in making aquafortis—viz., in earthen or stone retorts, in such a reverberatory furnace as will contain 60 or more retorts at once; and the retorts in which aquafortis can be made are equally fit for making zinc.

"An Enquirer" (Walton-on-the-Naze).—Ethiops was the absurd name given by the alchemists to certain black metallic preparations. Martial ethiops was the black oxide of iron; mineral ethiops, the black sulphuret of mercury; and ethiops by itself, the black oxide of mercury.

"Antiquarian" (Westminster).—No doubt exists that the Romans worked the lead mines in Derbyshire. A block of lead was discovered on Cromford Moor in the year 1777, with the following inscription:—"The sixth legion inscribes this in memory of the Emperor Adrian." Another block was found at Matlock Bath in 1783, inscribed thus:—"The property of Lucius Arneonius Verecundus, merchant of London." The weight of this block was 84 lbs. A third block, weighing 13 cwt. was subsequently discovered at Matlock; on it was found this inscription:—"T. CL. TR. LUT. BR. EXAR." probably meaning, "Tiberii Claudiani Triumviri Lutatidarii Britannorum Exargentaria."

"T. L." (Cheshire).—It appears strange that in a country so rich in almost every variety of mineral produce as Great Britain, should be entirely destitute of quicksilver, more especially as the coal formation in which that metal is commonly found is here so largely developed. There is, however, a passage in Bishop Watson's *Chemical Essays*, in which he mentions the circumstance of quicksilver having been found in a native state at Berwick-upon-Tweed. This discovery is said to have been made in digging out clay for the foundation of a house in the street called "Hyde-hill," in the town of Berwick, and it appears to have taken place more than half a century ago. The clay being dug out, lay for some time where it had been deposited, and the mercury was observed to exude from the small fissures, or cracks, which were formed in it as it dried, being apparently distributed throughout the whole mass of the clay. Many years afterwards, when some workmen penetrated into the same bed of clay, it appeared to be impregnated with mercury, which ran out in small globules. It is remarkable that so important a mineralogical fact did not attract more attention, and lead to some examination of the bed of clay, which appeared to be thus impregnated with quicksilver in the native state.

"An Engineer" (Birmingham).—According to the official returns in the years 1845, 1846, and 1847, more than 10,000,000 were expended in parliamentary enquiries and costs for railways.

G. Harvey (St. John-street).—The lead mines of Bleyberg and Gemund, near Aix la Chapelle, are explored in a sandstone reefed by many geologists to the red sandstone. The ore consists principally of nodules of galena, disseminated in this rock. They are very abundant, and of easy exploration. These mines produce annually from 700 to 800 tons of lead. The silver contained in it is not of sufficient value to pay for its extraction. Two thousand tons of ore are generally prepared and sold, in the form of black lead dust (alpifoux).

\* \* It is particularly requested that all communications may be addressed—  
 To THE EDITOR,  
 Mining Journal Office,  
 26, FLEET-STREET, LONDON.  
 And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL.  
Railway and Commercial Gazette.

LONDON, MAY 11, 1850.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

In the MINING JOURNAL of the 23d March last, we gave an abstract of a patent taken out by Mr. CHARLES VIGNOLES, C.E., for the conversion of peat into coke by the action of steam, heated to a temperature of about the melting point of tin or lead. By undergoing this process, after being air-dried, the remaining water is rapidly absorbed from the turf, and it is kept up until the turf is fully carbonised, and has become an almost perfect vegetable charcoal, or coke, retaining its original form as cut from the bog. We have just received from Mr. VIGNOLES a pamphlet on the subject, which, although stated "for private circulation only," we suppose we are not debarred from giving our readers some of the benefits of its contents. The subject is a highly important one, particularly to Ireland, and the author has treated it in that efficient manner which such importance demands. He commences by saying—

In all countries advancing in civilisation, the want of coal for fuel is felt in much greater proportion even than the progress those countries may be making in the arts, in manufactures, or in the modern system of steam-travelling, by sea and land. Wood is still the chief fuel for all purposes in most parts of Europe, Great Britain excepted; but it is in vain that the forests are relied upon to supply the great demand—they are disappearing, and wood is every day becoming scarcer and dearer, and many manufactures, dependent for their success (as almost all are) on a cheap and abundant supply of fuel, cannot be established at all, or, where existing, gradually decay; the expense of travelling is also increased, where coal for steam-boats, or coal-coke for railway trains cannot be readily procured. In fact, the cost of wood begins to be felt even in Russia and Poland, where we might have imagined the supply to be inexhaustible.

In France, Prussia, and nearly all over the continent, the coal-fields are few and far between, and whole districts are dependent on this country, from which the least interruption of supply causes great embarrassment; this fact is illustrated by the recent blockade of the Elbe and Baltic ports cutting off the supplies of English coal. Last winter the boats navigating the Vistula were blocked in by ice, and the iron establishments of St. Petersburg are virtually dependent on English coal, and are frequently affected by the want of it before the end of a long winter. No country feels the want of coal more than Ireland, and the author's object is to show that she possesses within herself the means of remedying this want. By repeated and careful experiments made at Berlin, the value of turf coke produced by this action of steam of high temperature has been found equal to that of gas coke, and may be generally applied to disinfecting purposes for domestic fires, or steam-engines, or for smelting and refining the ores of iron and copper, to working locomotive engines or steam-boats, and for smithies, breweries, distilleries, &c.

It has also been proved to be little inferior to coke from Newcastle coal, and that it gets up the steam sooner, and arrangements are making on the Hamburg and Berlin Railway, 180 miles long, for the supply of this turf coke at two-thirds the price of what English coal coke now costs—being nearly 40s. per ton; and also for the iron manufactures at Berlin, where the celebrated fine castings are made. Turf coke may be sold in Ireland at 10s. per ton, at which price it would be very much below the price of coal at the sea-ports for household purposes, or for steam-engines by land or water, as, at a selling price of 20s. per ton, turf coke would scarcely be half that of the best English coke, but 60 per cent. of gas coke, and only half the expense of wood in all the German towns.

On the subject of Ireland, Mr. Vignoles says—

This process of preparing turf for fuel has not been brought before the public until its practicability and economy have been tried and proved on a large scale. It is now submitted for the consideration of men of science and industry in all countries where coal is wanting, and it appears especially applicable to the wants of Ireland, and to the employment of its population.

To those who have given even but slight attention to the subject, it cannot fail to be obvious that numerous branches of employment may be opened up in Ireland, when once a supply of fuel, at a low price, is made available to all industrial purposes, and be dependent upon at the low price stated. One branch of occupation alone would be of the very highest interest; and it is not too much to anticipate its realisation—viz., the working of the rich iron ores of the Queen's County, Lough Allen, and other districts. Many of these ores produce iron of a quality equal to the best Swedish; and it is on historical record that when wood abounded in Ireland the make of iron there was greater than it was in England. This new method of obtaining a coke (which is peculiarly, perhaps, absolutely, free from sulphur), when made from the most compact turf, may be looked forward to for restoring the trade of making iron in several parts of Ireland, for the supply with the best iron imported from Sweden. Mr. Mallet considers that an improved mode of preparing the turf, and producing a better fuel, would probably be the best, and perhaps the only, path to the drainage of the Irish bogs, and their consequent appropriation to agriculture.

On the cost of the turf for royalty, it is stated—

The turf-bogs in Prussia seldom exceed 3 or 4 feet in depth, and it is customary, after the turf has been cut out, to level the ground again, and convert it into meadow land. The price paid for the turf at the present establishment at Friesack (about 30 miles from Berlin) has been, including legal expenses, about 72 Prussian dollars per Prussian acre (morgen) of 3060 English square yards. The depth of good turf averages 24 inches English—say, about 9-10th of a yard. The Prussian dollar being equal to 2s. sterling, the royalty of the turf is, therefore, 7s. 4d. per acre, or 100 square yards. This is very high, but the Prussian acre is 3650 square English yards.

£16 13s. ditto English acre of 4840 ditto.  
 £27 9s. ditto Irish acre of 7840 ditto.  
 In Prussia turf is cut and dried by task-work; and the task of four men working together in a gang is to cut 1800 cubic feet Prussian, to stack, dry, and deliver it for a given sum. This quantity is called a "day's work." It has been found by repeated experiments that ordinary wet turf contains 43 lbs. of moisture per cubic foot, and can be dried, by the sun and air, to 16 lbs. of moisture per cubic foot. The turf thus cut, turned over, and dried in the sun and air, yields 810 cubic feet of dry merchantable turf, or 45 per cent. of the raw or wet turf. In this air-dried state it has been ascertained that the turf still contains from 20 to 30 per cent. of moisture. In proportion to the original quality of the turf, the weight of the air-dried product varies. The weights of the turf in Prussia have been found to be as follows—(and they do not differ materially from the ascertained weights of Irish and Scotch turf.) The Prussian lineal foot is about 2 per cent. longer than the English foot. The Prussian square foot is 6 per cent. larger than the English; the Prussian cubic foot 16 per cent. greater than the English. The Prussian lb. is 3 per cent. heavier than the English lb.:

AIR-DRIED TURF WEIGHTS		
Per Prussian cubic foot in Prussian lbs.	Per English cubic foot in English lbs.	
Extraordinary good turf.....	80	74
First quality merchantable turf.....	43	40
Second or average quality ditto.....	36	33½
Third quality ditto.....	32	30

Taking 33 lbs. as the weight of a cubic foot of air-dried turf of an average quality, the cubic yard of 27 cubic feet, will weigh 27 cubic feet x 33 lbs. = 891 lbs., or, in round numbers, 8 cwt. Then 21 cubic yards will weigh 1 ton.

At the rate paid in Prussia, as previously stated—viz., 7s. 4d. for every 100 square yards, at this reduced price the royalty would be 4s. for 16 tons, or 3d. per ton, if the depth of the turf was only 33½ inches; but as the average depth of a good Irish turf bog may be taken to be three times as deep, the produce of every 100 square yards would be fully 48 tons; and 4s. for 48 tons, or 1d. per ton of dried turf, would be the royalty.

Taking the whole of the statistical returns on the cost of turf, coke for labour, carriage, interest on capital, coking, management, &c., is in Prussia 12s. per ton. The estimates for erecting the engines and machinery for the coking is 5000l. for each set of 12 cylinders, each containing 13 cubic yards of dried turf at each charge, which may be made twice a day, which gives 11,232 tons of merchantable turf coke per year from one establishment, costing 5000l. Taking the whole of these calculations into consideration, they show a cost per ton in Prussia, and other parts of Germany, as before-stated, of 12s., which probably is the average on the continent.

During the present very questionable position of the iron trade, and the decreased produce, not to say stagnation, in the manufacture, with the diminished dealings and disinclination generally extant to invest in railway shares, it is cheering to turn to a bright spot in the horizon, presenting a harbinger of hope, that such gloomy appearance of things is only temporary, and that better times are coming. The GREAT INDIA PENINSULAR RAILWAY COMPANY, who held their half-yearly meeting last week, are now, doubtless, progressing in a right direction, and the railway of 35 miles in length may be said to be commenced. At the last advice it had been surveyed across

the Island of Bombay, and nearly to the extreme terminus; measures were being taken to take out a portion of the line, and this was proceeding under the warmest co-operation of the East India Company; 34,000 shares, being one-third the entire capital, had been taken up by the Bombay shareholders. Under these circumstances, the demand for iron for construction of the permanent way for locomotives, machinery, and erections in India, must be great; and although 35 miles is no great undertaking, it will cause some demand; and we have no doubt that the effect this line will have on trade, commerce, and native habits being developed, railways will spring up in all directions of the peninsula, and cause a vast demand for iron and machinery from this country, extending over many years.

We have, from week to week, given our readers a full and faithful account of the progress of that great interest to which both their and our attention is continually directed. The iron trade of the kingdom generally has been for some time in a comparatively depressed state; the fact is, our productive powers, as to iron, from the richness and extent of our ores, and the multiplication of our active furnaces, had become so enormous as greatly to exceed any demand which could be permanently relied on, and the consequence is a suspension of our full activity in this department. This depression is, of course, felt in England and in Wales; but on turning our eyes to Scotland, there the prospect is still less cheering. The exports of pig-iron for the first quarter of the present year were less than the corresponding quarter of 1849, by 23,642 tons and 85,639l., while, in other sorts of iron, the quantity had increased; but the returns decreased.

The strike amongst the miners of Lanarkshire has been followed by a great reduction in the yield of pig-iron. So near as we have been able to ascertain, the following may be taken as the state of the works in the immediate neighbourhood:—Langloan, 6 furnaces, 6 out; Dundyan, 9, 9 out; Carnbroe, 6, 6 in; Summerlie, 6, 2 in, 4 out; Gartsherrie, 16, 15 in, 1 out; Castlehill, 2, 1 in, 1 out; Shotts, 4, 2 in, 2 out; Clyde, 6, 6 out. The number of furnaces in the works named is 55, and the number out, according to the preceding statement, is 29, and of those in, 26. We believe our statement is correct, and the number of furnaces out must reduce the yield of iron weekly by nearly 4000 tons. We have not heard of the state of the furnaces in Ayrshire, or in the Frith of Forth.

The men included in the strike are generally colliers—there being few ironstone getters; but if the state of trade continues as at present, there will be little chance of their labour being sought by the masters. We learn from the *Glasgow Daily Mail* of Thursday that the strike has already continued for early a period of six weeks. It originated in a demand made by the operatives, about two months since, for an increase in their wages of 6d. a day. This request was complied with in the first instance; but, after a brief experience of the change, many of the employers intimated that, in consequence of the depressed state of the market, and the large amount of iron in stock, it would be impossible for them to maintain such a rate. The men protested against a recurrence to the former scale; and on its being attempted to be enforced, so far from submitting to it, took higher ground, and preferred claims greatly above their previous demand. The terms put forward by them, as those on which alone they will consent to resume employment, are, that their wages be regulated by the prices of pig-iron, as declared in the London Prices Current—10 per cent. on the price being allowed them; also that they be paid weekly, without any compulsory deduction for any purpose; and that the "truck system" be entirely abolished. It is stated, however, that they will not insist upon the proportionate addition when the price of iron rules above 2l., so that 4s. daily may be accounted the maximum of their demand. To this the employers resolutely refuse assent. On the other hand, the great proportion of the men who have struck—among whom are several who were not subjected to the reduction of 6d. originally complained of—seem at present as resolutely bent on rejecting a less offer. They have organised a plan of mutual encouragement and support, which has hitherto wrought sufficiently well for their purpose. The country over which the strike extends has been partitioned off into districts—in one or other of which open air meetings are held daily; while aggregate meetings, at which the various districts are represented, more or less numerously, take place once or twice a week. Various persons, from English mining districts, have come down as deputies; and they hold out the promise of support from the places they represent. A numerously-attended meeting was held in the neighbourhood of Holytown yesterday—at a place having the significant and ill-omened name of "Lightbarnock"—at which a strong determination to stand by the terms which they had proposed was evinced; several of those present remarking that, if need be, they could remain out six weeks longer, and expressing their willingness to suffer considerable privations, rather than return on other conditions.

Under present circumstances, there is little need for this determined stand, even were their cause just; but, while we would always advocate the maximum pay to the workman that prices will afford, we cannot forget that, with increasing stocks and diminishing demand, it is impossible for the employer to pay so high; and the employees should participate in falling off in profits. However, if the misguided men will stand out, depriving their families of bread while it is to be had, there is little pity for them if the masters pay them off in their own coin, which they appear to be determined to do; for at the meeting held by them at Paisley, on Wednesday last, an arrangement was made, and a written agreement was signed by them, that all the ironmasters in Scotland, and we hear that they were all represented, should blow out for a period of at least two months, commencing on Saturday next—one-third of the number of furnaces which they had in blast at the commencement of the present year.

We cannot but sympathise with the colliery population, when in real distress from the pressure of the times; but their miseries are too often of their own making, and too often are they led away by demagogues and agitators, who, for popularity, or gain, lead them into the depths of poverty and wretchedness, and then desert them to shift for themselves. We think Mr. WYLD would show himself more the collier's friend if he ceased worrying them to get up meetings, and send delegates for purposes, which he must know, on consideration, the means employed could never obtain.

The amelioration of the hardships, and the improvement of the condition of the working collier, has been a theme to which, since the establishment of this *Journal*, our pen has been unweariedly devoted. We have had the pain to see inquiry after inquiry take place, committee after committee appointed and broken up, and report after report published on the means of preventing accidents, and securing better ventilation in collieries, and all without producing any good results, or tending to the abatement of those terrible catastrophes which so frequently spread wretchedness, despair, and ruin throughout the colliery districts. In another column will be found an account of a meeting of colliers in the Potteries on the subject of obtaining a bill, restricting the working of the underground collier to eight hours per day; and if the men are true to themselves, unitedly and steadily persevere towards that one object, nor suffer themselves to be led away by those arch-agitators who, professing to be their friends, for the sake of the gains they can wring out of them, lead them into deeper misery (we find our old acquaintance ROBERTS, facetiously called the "Miners' Attorney-General," has come from the north, to try his eloquence in Staffordshire—we presume he worked out his mine in the former locality), they will gain the assistance of the most influential and humane in the Legislature, and among colliery proprietors, and gain their long-neglected rights. It will be seen that in the House of Lords, on Monday last, Lord WHARFCLIFFE, on presenting a petition for legislative interference on behalf of the colliers, made some pointed observations on the subject. He referred to the increase of deaths by accidents, and pointed to the experience of Belgium in adopting legal precautions against loss of life as worthy of attention; and it was satisfactory, so far that he elicited from Earl GRANVILLE, that the forthcoming report of the present inspectors would be laid before the House before the end of the session. This report has been long looked for, and we trust it will throw such light on the subject as will prevent any further delay in the passing of this much-to-be-desired measure.

With respect to an eight hours' bill, we think there can be no doubt of its obtaining, when once taken up with that spirit and perseverance, which we have no doubt it will be. The Earl of ELMESBURY, who moved the second reading of the *Factories Ten Hours' Bill* in the House of Lords,



In a most able speech, is one of the largest colliery owners in Lancashire, and his humanity and consistency must induce him to support such a bill for the collieries; for surely if 16 hours is considered the maximum period which a man ought to work in the sun's cheering beams, and in, at least, a breathable air, eight hours should be the maximum for the collier, toiling in midnight-darkness, far below the surface of the earth, in a pestilential atmosphere, and environed by dangers which, in an instant, may hurl him into eternity. It is with satisfaction we observe a move is being made in the neighbourhood of Manchester for a series of meetings to take place, for the purpose of getting up a petition to the two Houses of Parliament for a colliers' eight hours' bill. The colliery population are, without doubt, a portion of the most benighted in the kingdom; and by limiting their labour to eight hours a day, time would be afforded for mental culture, and taking advantage of those means of education for their children, which are so greatly extending, and which will eventually be within the reach of all. We again impress upon the men to be true to themselves, plead their own simple but heartily-interesting cause, through delegates from their own body; no legal sophistry is wanted for its support, and they will bear their burden bravely into the haven of success. We have inserted some remarks on the Scotch iron trade in another column.

Little as the Cost-book System appears to be generally understood, we have seldom met with a more glaring case of ignorance of its principles than that afforded by the proceedings of the two-monthly meeting of the LLYWYMALENS MINING COMPANY, held on Tuesday. After the financial position of the concern had been explained, the chairman was about to pass to another subject regarding the mine, when a shareholder suggested the propriety of "passing the accounts," upon which the chairman actually endeavoured to show that this was unnecessary, because, he said, the "Finance Committee" (of which he is one) had already done so! Mr. COLLIERS observes—"The Cost-book System seems mainly distinguishable from that of joint-stock companies by the control directly exercised by the whole body of the shareholders over the management." In short, the constitution of the Cost-book company may be characterised as republican, compared with that of the joint-stock company, which delegates its powers, in a great measure, to an aristocracy of directors. But should powers beyond those usually exercised by the pursuer—for example, the borrowing money, the drawing bills, or the making of calls, or auditing and passing accounts—be delegated to a board of directors, or a committee of management, or to a select body of shareholders by any other name, and the general meeting of shareholders be discontinued and held at rare intervals, it is apprehended that the character of the Cost-book System would be essentially departed from. And, showing still more clearly the powers of the general body of adventurers, he says—"These general meetings review the accounts and report of the pursuer, and pass resolutions, either delaring dividends or authorising calls, and directing the mode of carrying on the mine," while the pursuer "superintends the works, orders the necessary materials, and keeps the cost-book."

It is quite manifest that, under the Cost-book System, the adventurers cannot be subject to any such order as the following, from a managing committee, much less from "a chairman," in their privilege of authorising an agent to inspect the mine for them at their own expense—viz.: "The written orders of the committee, embodying a resolution of the board giving permission," as contained in Major COOPER'S letter to the pursuer of the 15th March! We think the more the mine is inspected by different miners, the better for all the adventurers, many of whom know little of mining matters, whose personal investigations would be worse than useless. Every managing committee should court inspection of the mine, rather than discourage it, for no shareholder would likely authorise any one incompetent to inspect or give an opinion, whilst it serves as a check upon the agents at the mine. The committee of the Llynymalems shareholders discussed these subjects as a matter of "convenience," which, by the way, was no argument in their favour, forgetting the real question was, what were the true facts of the case as regards the powers and privileges of the general body of adventurers. Respecting the second resolution proposed, the less we refer to it the better. We hope that Captain FRANCIS, for his own sake, will see the impropriety of making a practice of writing private letters on the mine to individual adventurers, particularly containing important information, not disclosed in the regular reports. Under such circumstances, he could not expect the confidence of the adventurers in any other concern.

\* A Treatise on the Law Relating to Mines. By R. P. Collier, Esq., of the Inner Temple, Recorder of Penzance, p. 96.

In the Court of Queen's Bench, on Monday last, Sir FREDERICK THESIGER appeared to show cause against a rule, which had been obtained by the ATTORNEY-GENERAL, on behalf of the Electric Telegraph Company, for a criminal information to be filed against Messrs. WILLMER and SMITH, the well-known agents for the London and American continental press at Liverpool. The whole case was one of great importance, not only to the defendants and company, but to the public at large, as showing the grasping character of the company, the desire to obtain an entire monopoly of conveying intelligence by electric telegraph, as also exemplified in their action against Messrs. BRETT and LITTLE, and the danger of the abuse of the enormous power with which this company is already armed; but which they wish greatly to exceed. The case arose out of a letter, published in the *Morning Herald*, and written by the defendants, in which they distinctly charge the company with interrupting the messages and despatches. Sir F. THESIGER, in a lengthy address, of which the following is the substance, stated that the distinct charges contained in the letter alluded to, was matter in which not only defendants, but the press of Great Britain, and the public at large, are concerned;—that the company do not manage their affairs as required by Act of Parliament; that the whole is a monopoly; that favouritism, the most glaring, is practised; blunders and delays, the most monstrous and unpardonable; that the company wilfully impeded the transmission of defendants' messages to the London press; or attempted to impair their efficiency by delay in their delivery. They further state that disgraceful tricks are played by the Lotherby officials; "errors of the grossest kind have been made, words left out, so as to render the sense incomplete; and in cases where cipher has been adopted, others substituted, which, when translated, had an entirely opposite meaning to that intended." In concluding they state—"That they will convince the public that there is no security; that no interest will be guarded; and that, notwithstanding the utmost watchfulness, activity, and zeal of your several correspondents throughout the world, you will be baffled, should the company have a game of their own to play; they will satisfy you that schemes the most shameful, and such as persons pretending to the title of gentlemen should detest and abhor, have been resorted to, in order that the Telegraph Company may enjoy an illegal monopoly, and keep the public and the press at their mercy, so far as the promulgation of all late and important news is concerned." They then proceed to enumerate several distinct charges, where messages on great public occasions were interrupted or delayed.

Sir FREDERICK further stated, that the defendants had agreed with Mr. LEWIS RICARDO, the chairman of the company, to pay 1300*l.* per annum for the exclusive use of one wire, with a certain share of the profits; but this negotiation had been broken off, and Mr. RICARDO, who appeared piqued, threatened "that he would take care that WILLMER and SMITH should be deprived of the correspondence and agency which they carried on;" and it appears this was no idle threat, for, according to the affidavits, the company availed itself of the powers it possessed, to remove defendants from their occupation. At first they had no reason to complain of delays or blunders, but immediately after the negotiation was broken off, delays innumerable arose. Mr. G. V. ROBINSON, their London agent, stated in his affidavit, that it was part of his duty to transmit to WILLMER and SMITH the Saturday's intelligence to be inserted in the *European Times*. On the 19th of August, 1848, he did so in the usual course, but though sent in ample time to be delivered before, it was really not delivered till after, the sailing of the steam-packet. Similar delays occurred at both ends of the line on the 9th of September, on the 7th of October, and on the 14th of October, 1848. On the 7th of October there was a message of 33 words, which never had been delivered to the defendants. Mr. MASSEY, who was in the service of the defendants, spoke to the following material facts. He said that he was in the office of the Electric Telegraph Company on the 14th of October, 1848, when a message was delivered and repeated

by a boy named LARGO, who was thus employed in the office. The message was this:—"Don't post the message in the rooms this morning till after the sailing of the steamer, so that WILLMER and SMITH"—When the boy got to these words he saw MASSEY there, and stopped. MASSEY observed, by the movement of the needles, that there were only a few more words, but the rest of the message, instead of being read off aloud, was given in writing by the boy, and MASSEY was not aware of what the latter part of it was. This statement of MASSEY'S was, in a very curious manner, confirmed by BOYS, who was the superintendent of the telegraph-office in the intelligence department. The confirmation was contained in an affidavit of a person named RILEY, who said, that on the 29th of May, 1849, he heard BOYS say—"The only thing WILLMER and SMITH have got against me is, that some of their people heard a message I sent to Liverpool read off the instrument by a stupid clerk, to keep their message back till the packet sailed;" and he then admitted that he had, in fact, ordered their message to be stopped. This statement was confirmed by SPALDING, who said that he recollected the morning [of the 14th of Oct., 1848, and that the clerk then on duty said, that the message was to be withheld till the packet sailed. This was not all. Complaints were made by WILLMER and SMITH as to this proceeding, and the defendants had the letters of the company in relation to it. On the 16th of October they wrote to say, that Mr. ROBINSON had sent a message of 78 words, only 32 of which had reached them. An answer and a reply followed; and on the 21st of October there came a letter from the secretary of the company, to say—"I am instructed to say, in reply to your letter, just received, that the matter of your complaint is under the investigation of the directors." So that there was the most direct proof of the fact that the complaint was known to the directors, and that the charge was not denied by them. A great number of other cases of delays and errors were set forth in the affidavits (32 in number) for the defence.

Counter-affidavits had been put in; and Messrs. RICARDO and COOKE, two of the directors, swore that no delays had ever occurred in the delivery of messages. The case was exceedingly voluminous. Sir FREDERICK THESIGER spoke at great length, and was followed by the ATTORNEY-GENERAL, who said he appeared for the directors, who were personally libelled, and not the company as a body; and contended that the rule must be made absolute, unless men were to be libelled with impunity, merely because they were members of a company. The court, however, thought otherwise, and discharged the rule without costs, Mr. Justice CAMPBELL observing, "According to the rules which govern the practice of this court, and govern it for the advantage and benefit of the public, we think that this rule must be discharged, and that the complainants should be left to pursue their remedy by action. As there is an action already pending in respect of the question which has been agitated here to-day, and which can, therefore, come to be decided by a jury, I will not prejudice it by anything to fall from me now; but shall abstain from saying more than that this rule must be discharged."

The case is altogether an important one, and the decision completely divested of the complexity of that in Messrs. BRETT and LITTLE'S. Here, according to the affidavits, is a threat held out against the defendants, and systematically put in force, to their great injury in business, and loss of an acquired high reputation; and the perpetrators come forward to ask for a criminal information against the injured party for a libel, for endeavouring to set themselves right with the public. It requires no further comment; but we can hardly see the justice in refusing costs, and that on the sole ground that a civil action was pending against another party for a libel, somewhat similar in character, but different in wording.

#### IMPROVEMENTS IN WIRE-ROPE.

[Specification of patent granted to Mr. James Back, St. Helen's, Lancaster, ropemaker, for certain improvements in wire-ropes.]

The nature of this invention may be briefly described as follows; but the manner in which the same is to be performed can only be properly understood from attentive consideration of the specification, enrolled at the Chancery Inrolment Office.

It is stated by the patentee that the effect of the present system of twisting wire into ropes, by twisting all one way, is to occasion the rope to bend easier on one side than the other; and to make wire-ropes, which shall be twisted together, and plaited together opposite ways, is the chief object of his invention.

The invention may be stated to consist—1. In causing the wire, as it comes from the ordinary draw-plates, to be drawn on to blocks from the right hand to the left, and from the left hand to the right, or in opposite directions; and whilst being drawn on to the bobbins, when being made into strands, in causing the wire to receive a twist, if the wire would have been twisted in the opposite direction without such provision.—2. Manufacturing wire-rope by twisting diagonally over a core of helically-coiled wire-rope, in opposite directions.—3. Manufacturing flat or r- and wire-ropes, by plaiting together strands of wires upon a mandril, the spaces being filled up with hemp, &c.—4. Diminishing the number of wires towards the end of the rope, so as to form a tapering rope. Suitable machinery is described for carrying out the purposes of this invention.

The deputation of coal miners from Northumberland and Durham, referred to in last Journal as having had an interview with Sir George Grey, and with Sir Robert Peel, afterwards waited upon and were equally well received by Lord Wharfedale at his private residence to bespeak his interest on the subject of fire-damp explosions in mines. They also had an interview with Professor Hann, of King's College, who gave evidence on the subject of furnace paradox, first pointed out by Mr. Goldworthy Gurney, in the late committee on accidents in mines, in which they consider an important principle of life and death to be involved hitherto unnoticed.

EXTRAORDINARY BLAST OF ROCK.—At the Silver Mine Lime Works' Llanthony, the property of Robert Aitken, Esq., 3700 tons of stones were recently raised at one blast. The quantity of powder used to detach this immense weight of stone was 5 cwt. This, we believe, is the most extraordinary blast of rock which has ever been effected in Scotland.—*Glasgow Mail*.

MINERAL RICHES OF SOUTHERN ILLINOIS.—The *Morgan County Journal* says that the little county of Hardin contains iron enough to build the Pacific Railroad fifty times over; and the adjoining counties of Gallatin and Salina could furnish the state with coal for 1000 years. Several other counties are also rich in coal. Pope county has mines of iron, which is of a kind easily prepared for the furnace, being the brown hematite. Hardin county is also rich in solid lodes of lead ore, which is almost pure galena. There is also an other mineral of great importance. We copy what relates to it:—"Zinc is also found in great quantities in this same region, and frequently in the same mines with the lead. The ore is that called zinc blende—being a sulphuret of zinc. We have seen this ore lying in such quantities in a single spot, that a large steamboat could have been loaded down with it. At one point, only half a mile from the Ohio, it occurs in the same pit with lead, though in a separate body, in immense blocks of pure crystallised ore, weighing, in some instances, a ton each. The art of reducing this ore, by a cheap process, is unknown in this country, except to a very few; and it has been chiefly used for making brass, by fusing it with the ore of copper. Yet there can be no doubt that it might at this place be made very profitable, being far more valuable than lead. Especially might it be made valuable for the preparation of "zinc white," a carbonate of zinc, which is destined to supersede the white lead as a paint. It is equally durable with lead as a colour, and does not turn yellow, as lead does. It is also free from the poisonous qualities possessed by preparations of lead, which render its effects upon the workmen who use it so disastrous. As being interesting to the mineralogist, there are also found here ores of antimony, arsenic, copper, cobalt, and cadmium, though none of them in any considerable quantity. There are also (in Pope county) large beds of very pure lithomarge, or rock marrow, an interesting mineral, very rare indeed in this country.—*New York Post*.

MODEL FIREARMS.—Application has been made to the Commander-in-Chief requesting permission for the agent to a gun manufactory in Switzerland, to submit for official inspection a specimen of a newly invented gun, which has been introduced into the Austrian service, and his Grace has caused the request to be referred to the Master General and Board of Ordnance.

GLASS PIPES.—At a meeting of the Water Committee, on Friday last, specimens of these pipes, for conveying the town's water, were produced; but upon the report of the surveyor, they were unanimously disapproved of—so that the cast-iron pipes are the only available resource, after all the scheming for a substitute to get rid of the oxide or corrosive properties of this metal.—*Plym. Jour.*

CALEDONIAN RAILWAY.—At a meeting of the directors and the delegates of the preference shareholders, held yesterday, it was unanimously resolved that a dividend of 8*l.* per cent. per annum should be guaranteed to the proprietors of these shares.

TESTIMONIAL TO MR. GEORGE WALTER.—We noticed, some few weeks since, that a testimonial was in course of signature among the numerous friends of Mr. George Walter, the promoter of the Greenwith and South-Eastern Railways, and we now understand that it is being supported by some of the leading men in the borough of Greenwith.

#### COLLIERY ACCIDENTS.

In the House of Lords, on Monday evening, Lord WHARFEDALE presented a petition from a large number of miners in the north of England, praying their lordships to give them further legislative assistance and relief in their dangerous occupations. He might say that no class of men in Her Majesty's dominions were better entitled to the consideration of the Legislature. The petitioners commenced by describing the various dangers to which they were exposed, and he was afraid that, do what they would, their avocation must always remain full of danger. The very nature of their occupations led to most disastrous occurrences; but if any causes for those occurrences were allowed to exist, which could be removed by better ventilation and regulation of the mines, and if injuries were occasioned either by the parsimony or neglect of the proprietor of the mines, it was not unfitting for the Legislature to interfere on behalf of the parties whose liability to danger was thus fearfully increased. In looking to the amount of accidents within the last few years, he was sorry to find that they had been very much on the increase. In 1838 the number of lives lost was 349; in 1840, 498; in 1845, 562; in 1847, 462; in 1848, 470; and in 1849, 704. The petitioners referred to the various inquiries which had been made by Parliament, and certain public bodies in the north, into the grievances under which they suffered; and it appeared to him not a little remarkable that from these various inquiries was elicited one universal declaration, that the evils were such that redress ought to be instantly applied to them. He pointed to the experience of Belgium in adopting precautions against loss of life as deserving attention; and having adverted to the large proportion of accidents in this country attributable to defective ventilation, he referred to the prayer of the petition, that Parliament should take steps to increase the amount of security against accidents in mines. He differed in some degree, however, from the petitioners with respect to the mode of affording that security; and, having expressed his objections to the imposition of regulations by compulsion, as tending to lay the responsibility on the persons exercising the compulsion, he intimated his preference for a system which should increase rather than diminish the direct responsibility of those who were concerned in the management of the mines. In conclusion, his lordship expressed a hope that the Government would take some steps to reduce the amount of mortality in mines, and asked the Government when the report of the last commission on the subject would be laid on their lordships' table?

Earl GRANVILLE stated, in reply, that the report was in preparation, and would be laid on the table before the end of the present session.

The Earl of MALMESBURY said, that nobody could deplore more than he did the loss of life which was occasioned by accidents in mines; but yet thought that the Government deserved much credit for acting with so much caution before taking any direct steps in the matter. He hoped that the inspection would be instituted, and that the inspectors would be made directors of the mines.

Earl FITZWILLIAM said, that they should be particularly cautious in enforcing any particular plan on the proprietors of mines. If they gave the inspectors a compulsory power, it cast the responsibility on the inspection, and diminished it on the part of the proprietors. Much injury would arise from such a course.

The Earl of ST. GERMANS said, that he hoped that what had fallen from the noble earl who had just sat down would not deter their lordships from sanctioning such an inspection as might be deemed advisable. He should like to know an instance where the responsibility in any of these cases had ever been brought home to the proprietors?

#### LIMITATION OF HOURS OF LABOUR IN MINES.

A public meeting of the miners of the Potteries and neighbourhood was held lately at Stafford, for promoting a petition to Parliament, praying for the restriction of the hours of labour in mines. Mr. Daniels, an agent of the Miners' Association, was called to preside. The chairman, in stating the object of the meeting, remarked that, as the Legislature had passed a law restricting the hours of labour aboveground to 10 hours per day, it was most consistent with justice to ask that the poor miners who worked in the bowels of the earth should have their day restricted to eight hours. The miners had grievances peculiarly their own, and they were met in a legal and constitutional way to discuss them. Several resolutions were then passed for promoting a petition to Parliament for an eight hours' bill. One of the speakers was G. Evans, a collier, who, in arguing for the legality of the meeting, referred to the events in the Potteries in 1842, remarking that after that time he had passed two years in one of her "Majesty's colleges," for attending a meeting like the present, which was the only one he had taken part in for pretty near eight years. Mr. Roberts, "the Miners' Attorney-General," was present, and spoke at some length in seconding a motion in favour of a more extended system of union among the miners of North Staffordshire. In alluding to the propriety of the Legislature stepping in to abridge the miners' hours of labour, Mr. Roberts asked whether eight hours per day was not in justice sufficient for a man to be working hard in a mine, excluded from the light of the sun, breathing (particularly in badly-ventilated mines) a polluted atmosphere, and every moment in peril of coming to an untimely end? The importance of well ventilating, cleaning, and propping the mines, could not be too strongly urged upon the attention of employers. He had commenced to practise in the neighbourhood, and trusted that he should effect the same amount of good for the miners of North Staffordshire which he had accomplished for their brethren in the coal districts of Northumberland, Durham, and other places. His mission amongst them was to teach employers (such as did not know it) their duty, and to assist the men in redressing their grievances. The speaker strongly urged upon the meeting the necessity of forming themselves into a stronger bond of union, contending that by it they would obtain and secure those advantages which they could not gain without they were firm and united. Thanks being voted to the chairman, the meeting broke up.

A SCIENCE-BORN GEM.—DISCOVERY OF THE ART OF FORMING DIAMONDS.—The Paris correspondent of the *Atlas* makes the following remarks, which, if true, announce a triumph of mechanical genius as much without parallel as is the diamond itself peerless:—"The scientific world has been in a state of commotion during the whole week, in consequence of the publication of the discovery of the long sought-for secret of the fusion and crystallisation of carbon. The Sorbonne has been crowded for the last few days to behold the result of this discovery, in the shape of a tolerably-sized diamond of great lustre, which M. Desprez, the happy discoverer, submits to the examination of every chemist or savant who chooses to visit him. He declares that so long ago as last autumn he had succeeded in producing the diamond, but in such minute particles as to be visible only through the microscope; and, fearful of raising irony and suspicion, he had kept the secret until, by dint of repeated experiments and great labour, he had completed the one he now offers to public view. Four solar lens of immense power, aided by the tremendous galvanic pile of the Sorbonne, have been the means of producing the result now before us. M. Desprez holds himself ready to display the experiment whenever it may be required. The diamond produced is of the quality known in the east as the black diamond, one single specimen of which was sold by Prince Rostoff to the late Duke of York for the enormous sum of 12,000*l.*

STEAM NAVIGATION TO AMERICA.—The eminent success which has attended the establishment of Cunard's line of steamers between Liverpool and America, and the daily increasing trade between the two countries, together with the want of an extension of such communication between other parts of the United Kingdom, have resulted in the commencement of two new lines, one being from the Clyde and the other from Ireland. The first steamer on the latter line, and which, it should be observed, is at present merely a preliminary or experimental trip, is announced to sail from Galway for New York on the 1st day of June next.

IRON SHIP-BUILDING IN CORK.—At the close of this month the largest vessel ever built in Ireland will be launched from the steam factory of the Cork Steam Ship Company, on the Glanmire-road. She is to be called the *Pelican*, and is to be propelled by the screw. She is over 800 tons burden, and is built on the lines of the *Ajax*, which is declared the best steam-ship afloat of her class. The boilers, steam-engines, screw, and fans intended for the *Pelican*, are nearly completed, and will be ready to be placed on board the day she is launched. This vessel is intended to trade between Liverpool and Rotterdam.—*Cork Constitution*.

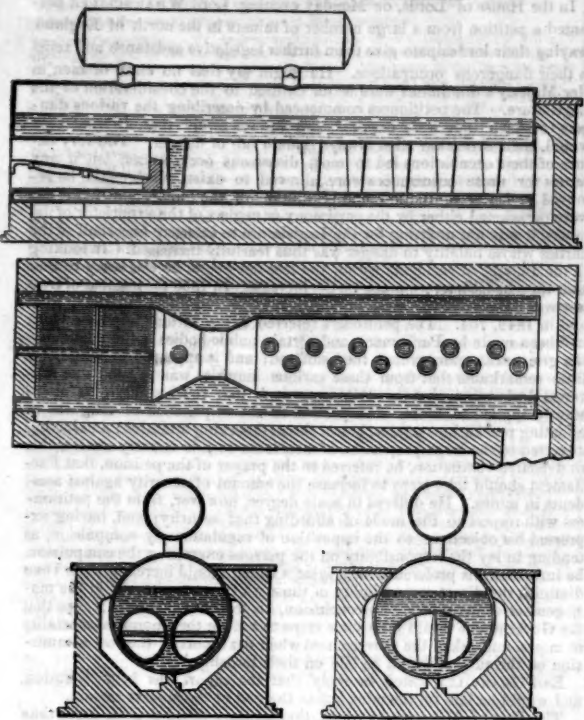
FIRE INSURANCE.—From a Parliamentary return just issued, it appears that the total sums insured by the fire-offices in England on farming stock, exempt from duty, for the year ending 25th December, 1849, was—by town office, 36,509,994*l.*; by country offices, 58,292,239*l.*; total, 94,802,233*l.* In Scotland, the sums insured in the various offices on farm stock amounted, in 1849, to 4,063,988*l.*

A railway excursion from Birmingham to Exeter and back is announced at a halfpenny per mile. A cheap train is likewise announced from Bristol to Birmingham, the fare being 7*s.* for 181 miles.

THE BELFAST AND COUNTY DOWNS RAILWAY.—On Monday the portion of this line from Belfast to Newtownards, a distance of between 12 and 13 miles, was opened for public traffic.—*Northern Whig*.



## GALLOWAY'S PATENT BOILERS.



Scale 10 feet to the inch.

These boilers have been extensively introduced in Lancashire by Messrs. W. and J. Galloway, of Manchester, and two of them have lately been put up at the Gutta Percha Company's Works in London. They consist, as shown in the sketches, of a cylindrical shell, containing two furnace tubes, which unite at the end of the bridges into one flue, which is circular for a short length, and then is carried on in an elliptical form to the end of the boiler. To stay this elliptical part, and to give increased heating surface, two rows of vertical water tubes are introduced, connecting the upper and lower water spaces in the boiler. These tubes are tapered from above, which affords more effective heating surface, and facilitates the current of steam and water through them. The flame, after passing the internal flue, is conducted round the sides of the shell as usual.

The junction of the two flues behind the bridges is especially designed to consume the smoke, each furnace being charged alternately; and when the boiler is not too hardly fixed, this very desirable object is effected. The absence of all air valves, or, in fact, apparatus of any kind for the stoker to manage, or rather, to neglect, renders this plan the most practical that we have yet met with.

The boiler shown above is the second boiler erected at the Gutta Percha Works, and differs from the first in the dimensions of the water tubes, those in the first being 12 inches diameter at the top, and those in the second one being 11 inches at the top and 9 at the bottom. There is also one tube more in the second boiler than the first, otherwise the boilers are alike in their dimensions. The evaporative power of the first boiler has been satisfactorily tested by R. Armstrong, Esq., C.E., whose experience on the subject of boilers must be sufficiently well known to our readers, and we have been favoured with the following data and results:—"The boiler, which is a cylinder of 7 feet diameter by 30 feet long, was driving a non-condensing engine, nominally of 30-horse power, but during the time of the experiment, it was indicated to average 50-horse power, besides making about 10-horse power of steam, applied to other purposes. The boiler was filled to nearly the top of the glass water gauge, where a mark was placed, and the feed-pump was stopped; at the same time the quantity of fuel on the bars was carefully gauged, and the state of the fire noticed, so that they could be left, as nearly as possible, in the same state at the end of the experiment. As the level of the water became lower, the area of the water surface was measured at each inch of its height. The results gave an evaporation of 1 cubic foot per minute, or 60 per hour; the consumption of coal, which was carefully weighed during the experiment, being exactly 336 lbs. per hour, which, compared with the water evaporated as above, is in the proportion of 11.1 to 1. This I believe to be the highest rate ever previously obtained from any kind of boiler, under similar circumstances, and with the same kind of fuel, East Adair's Main, which was by no means of the best quality." We are not in possession of the details of an especial trial of the second boiler, but its performance is stated to exceed that of the first, the evaporation being 12.5 lbs. water to 1 of coal.—*The Artizan for May.*

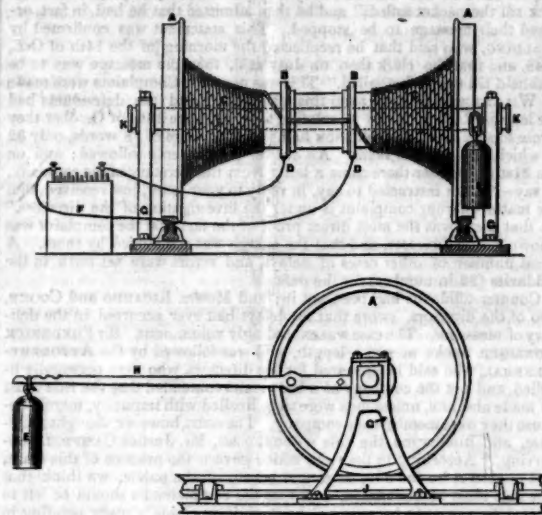
**LATTICE VIADUCT—KILKENNY AND WATERFORD RAILWAY.**—Tuesday last being the day appointed for the delivering up by the contractor of this fine structure to the company's engineer, and it being understood that its stability would be practically tested upon the withdrawal of the centring, much anxiety was manifested as to the result, and some large wagers were, we are given to understand, pending upon the issue. Upon the centring being completely eased off, the deflection was but 2½ inches. The viaduct so remained until Wednesday morning, without any weight being imposed upon it, when upon examination it was found to have subsided during the night by its own weight ½ in. additional. The great trial of strength now came on, and the whole weight, 72 tons, independent of persons on the engine and waggons, were laid on at rest, and then passed and re-passed at a speed of 15 miles, 20 miles, and finally 30 miles an hour. During the trials, the total momentary deflection at any time never exceeded 6½ in.; but this, upon the weight being removed, immediately sprung back or reduced 2½ in.; and the final settlement remains but 3½ in., an amount of deflection which is much below the most sanguine hopes of its projectors, or the theoretical surmises of scientific men.

**LOCOMOTIVE POWER ON ENGLISH RAILWAYS.**—In the absence of more certain and exact data, we may assume, as the means of an approximate calculation, that the amount of the locomotive stock necessary for each line of railway is in the direct proportion of the gross amount of its receipts, these receipts being taken as the modulus of the traffic. We find by the official returns of the railway commissioners for the half-year ending December 31st, 1848, that the receipts of the lines worked by the locomotive stock of the North Western Company was £1,320,819, while the total receipts of all the lines open for traffic, was £7,444,964. It follows, therefore, that the ratio of the traffic of all the railways of the United Kingdom, taken collectively, to that of the lines worked by the North-Western Company, was 4.5 to 1. Since then, the number of locomotive engines and tenders necessary to work the traffic of the North-Western lines was 457, the number necessary for the traffic of all the railways collectively would be 457 x 4.5 = 1965. It follows, therefore, from this approximate calculation, that the total work of the 5000 miles of railway open for traffic on January 1, 1849, was performed by 1965 locomotives. In the same manner, assuming that the mileage of locomotives, in performing this work, was proportional to that of the North-Western engines, its total amount would be found by multiplying the mileage of the North-Western engines by 4.5. Thus we have 7,532,290 x 4.5 = 33,885,589. The total distance run, therefore, by all the locomotives working the traffic of the railways of the United Kingdom for the 12 months ending June 30, 1849, was 33,885,589 miles. This gives a total daily mileage of 88,736 miles. To illustrate these stupendous results, let us compare them with moduli more in accordance with their magnitude than are the ordinary phenomena witnessed around us. The distance from the earth to the sun is ninety-six millions of miles. The locomotives of the British railways would, at their present rate of work, pass over it in three years! The circumference of the globe is twenty-five thousand miles. The same engines, with their present work, would go seven times round it in two days; and, in doing so, each engine would work only 3½ hours. Taking the average consumption of fuel by the locomotives at 35 lbs. per mile, the total consumption for the 12 months ending June 30, 1849, would be found as follows: 33,885,589 miles at 35 lbs. per mile = 1,185,995,615 lbs. The traffic was, therefore, worked by half a million tons of coke. But 10 tons of coal are required to make 7 tons of coke. The quantity of coal consumed in making the coke was, therefore, 722,958 tons. We may, therefore, conclude, that the railways consume at present nearly three quarters of a million of tons of coal annually.—*London's Railway Economy*

## Original Correspondence.

## THE LARGEST MAGNET IN THE WORLD!

SIR.—In November last I made a hasty communication to you on the results of some experiments, which I had conducted for the purpose of ascertaining what extent of adhesiveness of railway wheels to the rails could be obtained by means of electro-magnetism; and I then promised to supply you with the results of a practical application of the principle in a trial which I contemplated making. I have, therefore, much pleasure in submitting the same to you, and explaining the apparatus used, by means of the following description:—



The wheels used were of my patent solid wrought-iron disc shape, as represented by the drawing, and which are marked A.  
B B—are the commutators.  
C C—coils of copper wire, insulated in common tape.  
D D—the electrodes connected to the battery by the wires, as shown.  
E—the weight used to ascertain the amount of adhesion of the wheels, previous to and after magnetising them.  
F—the battery, containing six plates.  
G G—two fixed standards, provided with boxes and carriages for the axle journals to revolve in. The standards were secured by holding-down bolts, so that the wheels revolved *in situ*, as the driving-wheels of an engine do when the weight to be drawn exceeds the power of adhesion, or the rails are "greasy."  
H—the lever arm on which the weights were hanged.  
J—The rails of 4 ft. 8½ in. gauge.  
K—the axle of the wheels, which passed through a thin wrought-iron cylinder, on which the copper wire was coiled.

Having completed these preparations, we brought the lever to the position shown in the drawing, and weighted it before magnetising the wheels; and after repeated trials, we found 70 lbs. was the measure of resistance, or frictional inertia, which, for our purpose, we will denominate adhesiveness to the rails. We then returned the lever to the same position, and magnetised the wheels, and ascertained the amount of resistance, or adhesiveness, was represented by 112 lbs., giving an increase of 60 per cent. of adhesiveness to the rails.

These experiments were conducted in the presence of Mr. Hjorth, the patentee of the electro-magnetic engine, and a gentleman very extensively interested as a proprietor in railways; and they were most impartially managed, and the results most carefully ascertained.

It must be borne in mind, that the battery used was constructed with a view to quantity rather than intensity, and, consequently, the results may fairly be assumed as a minimum of the advantages obtained. However, they are quite sufficient to illustrate the correctness of the principle, and, I trust, quite enough to arrest the attention of all parties interested in this infant science, and also to ensure the careful regard of those who view things rather commercially than scientifically, as it is evident, by the application of this system, that locomotive-engines may be made much lighter than they now are, and so the wear and tear of rails, &c., caused by the present ponderous engines, might be very considerably reduced; and it is not laying oneself open to the charge of being a sanguine scientific theorist and enthusiast, to say that what has been developed by these experiments justifies the probability of this plan being successfully employed by the contending candidates for the Austrian Government premium for the engines intended for the Sommering service.

The arrangement of the coil, &c., as here shown, is not either intended or considered the best that can be made; but is rather the result of convenience, than that of design. I believe I am right in stating this to be the largest magnet ever yet made; if not, your columns will, probably, prove the means of setting me right.—*HENRY SMITH: West Bromwich, May 2.*

## COPPER WIRE-ROPE LIGHTNING CONDUCTORS.

SIR.—In your Journal of the 4th instant a letter appeared from Dr. Murray, stating that H.M. ships, *Bittern* and *Hazard*, were fitted with wire-rope conductors. The lightning fell, and did very considerable damage, shivering the royal mast. Having been one of the officers in command of the *Bittern* on the occasion referred to, I beg to state that the wire-rope conductor was not fitted to the mast shivered by the lightning, but the other masts were fitted, and protected by the wire-rope conductor. *United Service Club, May 8.* J. THOMPSON.

[This *apropos* confirmation of Mr. Andrew Smith's observations, which will be found inserted among our Notices to Correspondents, must be highly satisfactory. We insert the communication with pleasure, but must decline any further correspondence on the subject.]

## TUBULAR BRIDGES.

RESPECTED FRIEND,—Your correspondent, "An Engineer of the Next Generation," still persists in his erroneous conclusions, rather than acknowledge his mistake. He has based his calculations on the principle of a lever with only one fulcrum, or point of rest; whereas the beam, or bridge, as shown in fig. 3, represents all the properties of a parallel beam, resting on two points; for it must be admitted that those parts of a beam under the main tension bars are of no use in supporting either its own weight, or a load upon it, further than the fibrous property to resist the strain; but if that portion of a parallel beam of timber were cut away, it would, of course, weaken the beam, inasmuch as the fibrous part would be lost; but if an iron bar was put securely under the part cut away equal to the tension of the fibres in that portion of the beam, the beam would be equally strong. The figure, as represented, must, therefore, be treated as a parallel beam, resting on two points. Imagine the beam 8 ft. long, and 1 ft. deep, the strain produced by its own weight in the middle would be four times whatever it might weigh—viz.: 2 on each point of rest; 1 in the middle would cause a strain of 4—viz.: 2 on each point of rest. Remove 1 from the centre either way 2 ft., and the strain will be 2—viz.: 1 on the point of rest, and 1 on the middle, or 100 per cent. less, instead of 50 per cent. more, as stated by your correspondent. I presume your correspondent is certainly not a practical engineer, by his observation about the expense of the mode of junction by gibs and keys, as that mode is quite as economical as bolts and nuts, which must either be adopted in the junctions at the top of the tower. As to his assertion, that I have erred more than one-half in my calculations of the strains in the structure I proposed as a substitute for the costly tubular bridge, I am quite prepared to prove, *theoretically and practically*, the accuracy of my calculations. I incline to think "An Engineer of the Next Generation" will not venture to furnish your readers, or the public, with his real name; but if he is perfectly satisfied (as he states he is), he surely can have no objection to favouring us with his name; and if he can prove I am wrong, I will most readily acknowledge it. I assert that it is utterly impossible to make the floor of a suspension bridge inflexible without adopting the means of supporting the suspending bars by upright supports from the floor, in the manner I propose; and that it is

equally impossible to obtain perfect inflexibility either from a graduated or parallel curved chain; and the only advantage by James Dredge's plan is, that he adopts oblique instead of vertical suspenders, which causes a thrust against the abutments, and thus renders it somewhat more inflexible than an ordinary suspension; but as his main chain is curved, it must, therefore, inevitably be liable to flexibility, and the floor must yield to excessive pressure; but in the plan I propose, no material deflection can be effected, without either breaking or stretching the suspending bars. *Stangate, Lambeth, 5th mo. 7.* THOMAS MOTTLEY.

## EUDIOMETERS FOR COAL MINES.

SIR.—The miner is under manifold obligations to Mr. Richardson, C.E., for advocating his cause. For my own part, I have been long sick and weary of the subject; the apathy of Government, and the supercilious indifference of the proprietors of coal mines to "these necessary things," have disgusted me with the subject to a degree I cannot express, and so repulsive has the question become, that I dare not trust myself to its consideration. In my *Communications on Coal Mines* I had by no means forgotten the importance of eudiometers. I cannot conceive of anything more simple or easy in practice than the employment of a tube graduated into 100 parts, and fitted with a glass stopper at the summit, the lower line to commence, say, 2 inches from the lower orifice. The solutions to be employed are those of chlorine, green sulphate of iron, impregnated with nitrous gas, and caustic potassa, or baryta. The solution of chlorine in water will determine the quantity of hydrocarbonate, or fire-damp, present; that of green sulphate of iron, impregnated with nitrous gas, the relative quantity of oxygen; and that of lime water (or, better, caustic potassa, or baryta), the relative admixture of carbonic acid, or choke-damp.

The relative constituents of pure air are 21 per cent. oxygen, and 79 nitrogen. If, on using the first test, there be several parts per centage absorbed, this will be the relative quantity of fire-damp present. If, on using the second test, 21 per cent. is absorbed, the atmosphere may be considered relatively pure, or otherwise in the ratio of absorption. The absorption on employing the third test will indicate the per centage of choke-damp present. I consider the approximations obtained by these means amply sufficient for the practical purposes of the miner. The employment of the eudiometer is simple; remove the stopper, and dip the tube into the solution till the liquid rises to the lower line, replace the stopper, apply the finger firmly to the lower orifice, shake the liquid for some time in the tube, then withdrawn from the liquid, and finally immerse the lower end into water, when the finger must be withdrawn, and the absorption will be immediately denoted by the rise of the fluid in the tube and the per centage read off. These solutions can be always kept ready for use. *Portland-place, Hull, May 8.* J. MURRAY.

*Errata.*—In my letter headed "The Suspension Bridge," in last week's Journal, for "ravines," read *ravines*; and in that headed "Electric Storms," for "Caracassene," read *Carcassonne*.

## ON THE PURIFICATION OF GAS.

SIR.—I have observed a letter in your Journal from Mr. Laming, which has much surprised me, as he states that I have pretended claims to an invention which he has patented. I should not, however, have troubled you with an answer to it, but that it might be construed into an admission of his statements, which I beg entirely to contradict. Mr. Laming has no patent, that I can find, for the plan of purifying gas, published in your Journal by Mr. Phillips, of Rugby; but I see, by a paper which he read before the Society of Arts a week or two ago, and published in your valuable Journal, that he now claims it; but which, I assert, belongs to me, as well as most of the other useful processes he mentions. I must crave your indulgence while I make a few remarks on this paper, as it seems to me a very extraordinary one. Mr. Laming states, if rightly reported, and I understand him rightly, that it is because the directors of gas companies have relied too much on their superintendents, and have not employed a competent chemist, that lime has been so long used for purifying gas, which loses 67 per cent. in the operation; but that his invention, which he describes, and which he says has been used successfully in Paris and at the Chartered Gas Works, will supersede the use of lime. The gist of this invention, without going into all particulars, he states to be—converting the sulphur and ammonia, taken from the gas, into sulphate of ammonia by the action of the air, changing the sesqui-sulphuret of iron into a sulphate of iron—the sulphuric acid of which eventually combines with the ammonia of the gas, and forms sulphate of ammonia.

Now, this is no doubt a great invention, with which Mr. Laming has thought it worth while to occupy the time of the Society of Arts—the only objection to it being, that it does not exist in fact, but merely in imagination; for the sulphuret of iron is not converted into sulphate of iron by the means stated; neither is there any sulphate of ammonia formed—at least, I have never been able to do it, and I have tried it many times, long ago. I, therefore, shall not interfere with Mr. Laming, if this is what he considers his invention; but if he uses what I consider mine, it will, of course, as he says, have to be settled by the judicature of our country. *Chemical Works, Deyford, May 8.* F. C. HILLS.

## THE PATENT LAWS AND TREATIES OF COMMERCE.

SIR.—The explanation of Mr. F. W. Campin, given in your last week's paper, is merely a repetition of his former assertion, that 62L, and not 30L, for an English patent is paid into the Treasury. The public will be enabled to form their opinion upon the fact, by being told that the only acknowledgment they receive for money paid by a patentee to the Government, through a public office, is the 30L stamp put upon the patent deed itself—the truth of which is known to every one, and their number is legion, to whom the grant, or privilege, has been awarded. And what an absurdity it is, if, as Mr. Campin asserts, that more than 30L does find its way into the coffers of the public, that the payee should keep both the money and the receipt too, whether in a stamp or not! Upon what authority can any public officer demand the payment of a tax, and yet withhold the acknowledgment of it? And, again, if what Mr. Campin calls "Queen's Bill," "Signet Bill," "Privy Seal Bill," and many other "bills," are indeed realities, and required to be kept in the public offices which issue these precious documents, surely in this case they are not better preserved with a stamp than they would be without it. The simple truth is, the more the present practice of granting letters patent is looked into by the public (and the subject of patent must soon force itself upon their notice), the more anomalous and injurious it will be found in its results, especially as regards the present intercourse with foreign nations, the improved and improving state of science, and the freedom, once for all, conceded to trade and commerce—the basis of which freedom I assert to be a FREE TRADE IN KNOWLEDGE.

As soon as your other correspondent, Mr. Mushet, has concluded his remarks, I will offer a few words in reply to them; but they will be very few indeed, if his observations are not more to the purpose than, in my opinion, are those which he has already advanced. *May 8.* A CONSTANT READER.

## PATENT LAW AND PATENT RIGHT.

[Concluded from last week's Mining Journal.]

SIR.—Your author argues as if a patent were a taking from the public something it already possessed. Can it be asserted that the copyright of a new publication, whether a nonsensical novel or a book fit for a human being to read, is a right abstracted from the public? If the work has a sale, booksellers and printers may wish the copyright abolished, because they are hindered by it from adding a share of the proceeds to their own business; but what has this unjust desire to do with right? The positions of the author and the inventor have no difference, except this, that the author has to pay no fee of 100L to secure his property in the book he prints. The inventor has, therefore, the strongest claim; for, besides the inherent right in his own thoughts, he has paid to the public a price for placing them within the pale of the law. A maker may long to use the invention of another, as a bookseller may long to print another's book; but is the check upon this desire of robbery to be denominated public injury? One of the alleged grievances the public labours under, says your author, is, that a patentee need not, unless he likes, sell his invention. True, and I may print a book for my amusement, and refuse to sell it. What sort of argument is this against patent right? Has the public a claim to the produce of a man's brains, and to squeeze them *ad libitum*? But the existence of such an impracticable habit amongst inventors is a chimera. The very purpose of taking a patent is commercial; the intention is to sell it, or to sell, or hire, the right of using it, or to sell what proceeds from its application. What dread is here of its being rendered inaccessible? The patentee, like another dealer, goes, according to the best of his judgment, to the market which he has prepared for. If the patent right for an improvement, or novelty, forbade every one else from traffic in the branch of manufacture which it concerned, and made the patent shop the only source



of supply during the patent term, there would be a ground for this talk of public injury. This, in fact, was the abuse of the early monopolies; but as regards a novelty, or improvement, prior makers have nothing to do but pay the dues for its use. The price the patentee asks for this permission must be left to the common sense which guides all acts of business; if he asks more than the worth, his patent will lie on hand, and he will be the loser; if he can use the novelty himself, and sees it is his interest to confine the sale to himself, and therefore asks a prohibitory fee, has he not a right to do so? The object of a patent is to guard that which is in itself a man's own from the invasion which may follow on publicity. Where a process is of a nature that can be concealed, the inventor consults his own interest most effectually by concealing it, and avoiding the risks of a publication. What inquiry is to force this secret out of him? Compounding of drugs may hold it a public injury that the receipt for James's powders is retained by its possessors, or that Martin Van Buechel transmitted his *opus* to his son. If such proprietors cannot be tortured into a surrender of their knowledge, why is the patentee who trusts his secret under a legal guarantee, for the mutual benefit of himself and countrymen, to be deprived of his rights, and regarded as an incubus? His notions are as much his own as his hands are, or his head. A man's property in his hands is protected by the law, much more his property in his head, as the more excellent member. When the Act of James I. declares that monopolies are abhorrent to the law, this does not mean the law abhors that a man should possess his own, but that he should absorb the rights of others. It is equally abhorrent to the law to parcel out the goods of one amongst many, as to gather the goods of many to aggrandise one. The latter was the pressing danger when this Act was passed; the former is the pressing danger now.

The whole facts of patent history are a record against the assertion that these grants injure the public; they are, on the reverse, a register of private losses for the public good. A tenure of patent right is a position about as enviable as a tenure of the pillory. The majority look on, wish he may come to no worse, and wait or pass by till he is safely out. Some compassionate individuals pity and encourage him with a little sustenance. Others bargain with him for the price of his release; but the minority of scamps make their amusement in his troubles. His term is a game of blind man's buff, where he catches who and what he can, and chiefly knocks for his labour. He has first to move the *vis inertiae* of the multitude, who are always slow to change their habits; and there is this decided comfort in their waiting—the chances are a hundred to one that, just as the inventor has rigged his gallant vessel, and got it under weigh, his patent term will close, and he will be disembarked for the "public good." Why then pay now, when they shall soon be put free on board. He may be fortunate enough to find men of honour and enterprise to encourage him, but it will be in the face of a mob of blacklegs to hustle and defraud them. The first and simplest mode of robbery, if the case admits it, is to use the invention without acknowledgement. Now, instead of the poor unhappy public being in the condition your author represents, with patent trammels sown broadcast over it, unable to move one footstep without the danger of being engulfed in a pitfall, at the bottom of which lies a terrible patentee ready to overwhelm it with fearful costs of law, what is the fact? Suppose a patentee discovers his right is being infringed (though, in nine instances out of ten, he may attain no knowledge of the invasion), and he gives the party notice of infringement, what is the really awful position of this individual item of the immaculate public beneath the jaws of the patent lion? If he be honest, and has infringed by accident, a little rational inquiry into facts will satisfy him, and he will make an honest arrangement with the owner. There certainly are some members of the public who consider it a hardship they cannot rob with impunity, and are very turbulent under interference. If the invader belongs to this class (and I conceive honest invaders who infringe patents by accident are rather rare), and is determined to rob as long as he can, what is the next act of cruelty he has to suffer from the tyrant patentee? If the question is clear and simple, he is deprived of his gratification under the penalties of an injunction; and the patentee has the satisfaction of adding about 50*l.* to the first cost of his patent. But if there are points favourable for litigation, and the pirate is a determined offender, with a strong purse, the value of the inventor's patent may be increased by hundreds of pounds of law costs. If without the means to complete the litigation, he may be forced to submit to the infringement, and have, perhaps, the satisfaction of seeing his very right usurped by the pirate under a new patent, which he may be able to hold by his means against all comers. Established manufacturers are inevitably in point of might, whatever they may be in right, on a stronger position than the new inventor; nothing, in short, can be more absurd than to suppose the whole public overruled by a solitary inventor, subjugating it by his private and perhaps paltry resources, and the devices of his brain.

I agree with your author as to the impropriety of giving a patent right in this country to inventions already perfected abroad. The inventor has no inherent title in the invention; the grant is, therefore, not supported by the principles I have been enforcing, and which, like all principles, should be maintained in purity. As the first in the field, the inventor will have the advantage of pre-occupation to reward the degree of enterprise, or intelligence, which he has exerted. To exclude the public of makers and consumers, as in a strict invention, is unjust to them and to the due claims of genuine invention. The two cases ought not to stand on the same footing. The foreign patentee may, if he chooses, secure for himself patents in this or any other country upon his inherent right; but, failing this, a stranger cannot stand in his place, unless by purchase. It is as unfair as it would be to grant a patent for a novelty in this country to any applicant, which the originator had presented freely to the public. Still, it may occur that the cost, trouble, and foresight of adapting an invention in another locality, where materials and circumstances differ, may deserve some encouragement. As, for instance, a short term of (say) five years, if specially applied for as a foreign adaptation, and without this declaration being made, the grant to have no protection against a foreign use being proved, and the applicant to be liable also to prove his peculiar adaptations. Your author states his instance as if the French Government inquired before the grant into the fact of foreign use; but this is not, I believe, correct. The provision is merely that the proof of it will void a claim in their courts of law, as lack of novelty will void a claim in ours. I agree also with your writer on the impropriety of three separate patents being required for this kingdom. Some months since, I pointed out the incongruity of preserving this antiquated usage; and I agree that the fixing a good round sum as the cost of patent right, is really an advantage to inventors, by discouraging hasty and ill-considered patents, and ridding sound discoveries from the embarrassment and mischief of increased litigation; but as to this high price being any check upon the undeniably prevailing "haste to grow rich," I doubt much if patents have any share in fostering that spirit. Patents hardly "make rich" often enough to be a snare. I never heard of them doing it suddenly, though assuredly they have often both slowly and suddenly made many poor. This danger is surely a cloud afar off. The most unobjectionable improvement I have seen advanced seems that of Mr. Campin, to grant a patent for a small preliminary payment, and the right to date from the grant, and the full payment to be made on specification and enrolment. The first steps and experiments of inventors would be facilitated, whilst the full check against an increase of futile claims would remain.

Amongst many fatal objections which exist to the plan of setting chemical, mechanical, &c., boards in judgment on a proposed grant, I would name one of great weight. It is well known that the tendency of those who have established their names in a particular pursuit, is to discourage novelty. They are apt to feel that they have done as much as can be done. I undertake to say that, if the grant of a patent for heated air in smelting iron had been submitted upon its merits to the most practised men in the business, it would never have existed at all, so entirely was the theory opposed to pre-conceived opinions and facts.

A new invention is often merely a light existing in the inventor's own mind, which leads him he hardly knows whither. It is an infant as yet scarcely born, and it is contrary to all nature and common sense to set an inquest on its body, to decide what manner of man it will grow up to be. The sickliest babes have been reared into the greatest heroes. The inventor asks no more, in seeking his patent right, than to be permitted to call his offspring his own. He undertakes to rear it at his own cost with no unusual favour, except that it may not be kidnapped so soon as it appears to be maturing into a likely child. He only purchases the right of citizenship, that it may not be an outlaw, with every man's hand against it; and he has quite a sufficient task after it is merely placed within the pale. There is enough of interference already in fashion between parents and children, without subjecting our intellectual offspring to Government surveillance. The principle is mistaken, for the strength of the body politic lies in strengthening the individuals which compose it, throw-

ing each back upon his own independence and resources, and letting him reap strictly for himself the fruits, whether they are good or evil. Nothing can be more sound and comprehensive than the words of the Act which defines our patent law. A great deal of the wrong which patentees have suffered under it has arisen, as I before remarked, from the necessarily precarious nature of a right founded upon a novel idea, and which is often but the door to many novelties. With great inconsistency, your author advances, as one of the grievances inflicted by patent right upon the public, that the grant is no privilege at all. To grant a man nothing surely must deprive the public of nothing; where nothing is given, nothing can well be taken away. But this much is taken from the public by a patent grant—the privilege of the highwayman to stop and rob the owner when it pleases; it makes this illegal, and it makes it legal for the traveller to protect himself as he best can, at his own expense, to the end of his journey. He is on an expedition of discovery; if his courage, toil, and foresight, carry him safely through, the whole result of his attainments is ultimately to be enjoyed by the public, and added to the common stock of utility and convenience. Is it not too much, then, to pester and revile him on his way as a nuisance? The more absolute, intangible, and perfect the rights of inventors can be made in that which owes to them its existence, the greater is the public advantage: mere self-interest would dictate this, looking forward to the reversionary right. Security and independence are the very elements of improvement and progress; to make a man's own his own, is to brace the public with nerves of iron. We should not seek to throw down the barriers, and cast away the valuable enactment under which such great things have been worked to maturity; but, on the contrary, to interpret its provisions, according to the emergencies of our condition, more stringently and more completely in favour of patentees, keeping pace with the multitude, value, and complication of the interests which have been called into being. No man can be rewarded upon the merits of a patent before it has worked out its value; and if remuneration is to be deferred until an invention is perfected, without protection, there will be neither usefulness or merit to reward.

April 3.

DAVID MUSHET.

#### THE COPPER TRADE.

Sir,—If it were not for the serious risk of this country soon losing its pre-eminence in the copper trade, I should probably not have ventured to trouble you with the following few remarks. It must now, however, be evident to every one who has studied the subject, that unless immediate improvements in smelting are adopted here, this country can no longer enjoy the distinction of producing more copper than all the world besides. This appears very plain, from the fact that, although the price of copper in the United Kingdom, last year, was comparatively moderate, yet the importations amounted to 44,114 cwts.; and they are likely to be vastly exceeded this year, if we may conclude from the accounts just published of the Board of Trade, for the first three months ended 5th April. According to this document, only 1 cwt. of copper was imported in the first quarter of 1848, while there were 6670 cwts. in that of 1849, and no less than 39,470 cwts. in the first quarter of this year. And there have been considerable additions since, but which, of course, cannot appear in those returns for a few weeks hence. For instance, it was only yesterday announced that 600 cwts. of copper were imported by steam at Southampton; and it must be remembered that only a few tons of the several hundred tons which have now been smelted in South Australia have reached this country. These results, I am satisfied, would never have been so great were it not for the deadening influence in this country upon almost all enterprise by undue speculations in railways. But although the terrible loss of 1,500,000*l.* in two railways in the West of England be too true, a greater loss in a few years than even that will ensue, if nothing be attempted in the trade, which now so imperatively demands improvements.

May 10.

W. BIRKMYRE.

#### MINING IN FLINTSHIRE—RULES IN MINES.

Sir,—May I presume to lay before your readers a short account of mining in Flintshire; and, to the best of my abilities, to account for the great fluctuations so often experienced in the mines in which I have the misfortune, for more than 40 years, to gain a living for a large family by the "sweat of my brow?" The mines, as rich as certain of them are known to be, are subject to their fluctuations—not so much from the uncertainty and fluctuations of the veins, as from the disposition in the parties working them. It has long since been a practice in Flintshire (I suppose arising from the working of mines by the late Marquis of Westminster) to encourage men having a few hours a day on their own account to make discoveries on his property, which would fall into his hands at the end of the year, for which a 12 months' sett had been granted. This indulgence has at last brought my neighbours, who are always more than anxious to take advantage of any indulgence given them, and to benefit themselves at the expense of others, to adopt this practice.

Having many friends most respected, I feel myself bound to speak out, at least, some truths, and say that the Messrs. Taylor first introduced a proper system of mining in this country, and they only carried their point with great apparent loss at the time, and their rules and regulations with the men were adopted only in a few mines besides their own. When the Halkin Mines found their way into other hands, the old practices were again resorted to, and the proper system entirely lost sight of—all falling back to what is called six hours per day, which is only, in reality, four hours working; and when the Mold Mines so much fell off, the whole country seemed to be reduced to the old practices of every man becoming two men, working in an established mine about four per day, where he looked for support for himself and family by the means of supplying his annual bargain with stores, such as candles, powder, smith's cost, ropes, and nails—and, in many instances, taking on his person, coming from underground, such quantities of ore, to be carried to his private bargain, as to pay for his second shift, without touching a stroke in it. As to the dishonest practices maintained between such parties and shopkeepers, their partners in such bargains, I will at present say nothing about, but stick to the point, as a labouring miner, to show the injustice to myself and a few others, not so privileged by agents, and say, for a great part of 40 years, I have been a lodger from home, having heavy additional expenses in lodgings, &c.—lying in the sun in some sheltered spot one-half of the day, or burning my host's fire, to save me from shivering; whilst my partners have been working there by bargain, using the stores before-mentioned to my expense, and when I reproach them for so doing, they tell me it makes no difference—that work as much as they may, and let the cost of stores be ever so small, that ultimately wages only will be allowed us. To this doctrine I do not agree; for I feel, from experience in well-conducted mines, that the more I work the better I am paid; and I shall be glad to see the day when rules in mines are attended to, and each man has only one employment to look to. If this is carried out, there will not be such fluctuation in mining, and I may, in my old age, enjoy my fireside and family every night, and be on equal footing with other working miners.

May 7.

A HARD-WORKING MINER.

MAGNETS.—At a recent meeting of the Royal Institution, Dr. Faraday produced a magnet of remarkable power, to which he invited attention. This magnet was made by Mr. Elias, of Haarlem, and presented to Mr. Faraday by Mr. Logeman of that city. It weighs 0.95 lb. and lifts 26 lbs., and its power is not diminished on the keeper being forced abruptly from the poles, even though this be done many times in succession. Mr. Faraday reminded the meeting of Haecker's formula, which fixes the greatest sustaining power of the best artificial steel magnets at 10.33 N (N being the weight of the magnet); and he stated that this magnet has twice the power expressed by that formula; and that even when a disc of letter-paper is interposed between the poles and the keeper, it will sustain the weight indicated by this formula. Mr. Faraday mentioned that the small horseshoe magnet belonging to the Royal Institution weighs 7 lbs. 14 ozs., and lifts from 40 to 41 lbs. (i. e. nearly 10.33 N). He concluded by noticing that this magnet of Mr. Elias would support its own weight at a single pole; and in this property it resembles the cylindrical bar magnets now made in the electro-magnetic helix, and used in the magnetical observatories. He suggested that this horseshoe magnet of Mr. Elias might probably be charged by a similar process. These magnets are manufactured in Haarlem at a cheap rate, even when possessing great power.

OPENING OF COAL MINES IN THE COUNTY DOWN.—The Marquis of Downshire has commenced the opening of a coal mine in the vicinity of Hillsborough. The shaft has already descended a considerable depth, but it is not expected that coal can be nearer the surface than 200 feet. It is said, also, that his lordship intends to open a copper mine in his own park, where, it appears, there is every symptom of a plentiful supply of ore.—*Belfast Paper.*

#### COMPANIES PROCEEDING UNDER THE WINDING UP-ACT.

DUISBURG IRON COMPANY.—On Saturday, Master Dowdswell appointed Mr. H. Croysdale as official manager to wind up this company's affairs, on the petition of Charles Vicomte de Sequeville, who with others, in 1847, expended considerable sums, with the view of working iron and zinc mines in Westphalia. Owing to the disturbed state of the north of Germany in 1848, the concern could not be proceeded with, but on the peace being signed by the Danes and the Germanic Confederation, the company was started with a capital of 45,000*l.*, with a London committee of superintendence, consisting of Major Moore Cooper, of Margrave, Berks; Hon. William Gore, Wilton-crescent, and J. F. Murdock, Haymarket, as trustees, the chairman receiving four guineas for each attendance, in the double capacity of chairman and trustee, and the other members two guineas a visit, in their double capacity of trustees and members of committee. Petitioner subscribed large sums of money for each current expense, opened negotiations with the Prussian authorities and merchants at Cologne and Elberfeld, in Rhenish Prussia, and a central office in Moorgate-street, but none of the shareholders would make advances on their shares until the company was "more fully organised," or liquidate its debts, and in the course of the last year it became "defunct," and 700*l.* in debt to the petitioner.

DIRECT BIRMINGHAM, OXFORD, READING, AND BRIGHTON.—On Monday, the winding-up of this undertaking was opened before Master Brougham, on the petition of Captain Stopford Jones and T. Nias, the promoters, who state that the applications for shares far exceeded the amount at which the share capital was fixed; that a large number was allotted, and the deposit paid only on a few; that the expenses incurred in the preliminary proceedings are still outstanding, that no subscription contract or deed of settlement was ever prepared, and that divers actions have at various times been brought against the provisional directors. It appears from the evidence of Mr. Rayner, the secretary, that a resolution was passed by the provisional committee to the effect that the promoters, Nias and Jones, were to be paid 2800*l.* for reimbursement of all their expenses up to the date of issuing the prospectus, provided the deposits were paid, and to have 2500 shares; that the solicitors were to have 2500 and the secretary 500. The latter states that he was 18 months at work, and that on applying for something in the shape of 50*l.* to "grease the wheels" with, instead of the "grease" being applied he had not received a farthing. There were applications from the public for upwards of 400,000 shares, but only 4000 were paid upon, or 10,000*l.*; and it would have been madness, with so small an amount, to have gone on. Did not know that at this period the directors were actually being sued by creditors, but a vast number of writs were being issued against them. A contract was made with Mr. Alexander, the engineer, that he should not charge more than 6500*l.*, and that if that was more than the cost, he should return a certain sum. He was paid 1000*l.* at a time, and brought an action after receiving 4000*l.* The scheme, with hundreds of others, failed about the time there appeared an immense manifesto in the public newspapers, giving a list of all the railways in the kingdom, which knocked down all these schemes. Capt. Jones examined—States that he left the company in disgust, in consequence of a course being adopted he disapproved of, and the confusion caused in committee by the panic. The scheme was extolled above all others; and Mr. Vignoles, the company's consulting engineer, told them, "Gentlemen, this is a first-rate project, and one that will be made in its entirety or in detail." Proceeding with the list of contributories brought in by Mr. Hutton, official manager, the Master decided that all those members of the provisional committee who, by letter, accepted 100 shares were liable; but making those who, by a minute of the board, were to take 200 each, but gave no written acceptance, liable in respect only of 20 such shares.

METROPOLITAN RAILWAY JUNCTION.—On Tuesday Master Kinsler proceeded with the settlement of the list of contributories liable to pay off the outstanding claims of this concern, the assets in connection with which are reported to be about 800*l.*

KILBRICKEN MINING COMPANY.—On Wednesday Mr. Crookford, and other contributories to the winding-up of this undertaking, attended before Master Richards, who had levied a call of 1*l.* 10*s.* per share on 1300 shares, and contended, that having paid more than 10*l.* per share, the sum paid by the general body of shareholders, they were entitled to credit for it to be deducted from the call. Mr. Harris, for the estate, contended that there was no legal liability to pay more than 10*l.* per share, which was the extent of each shareholder's liability; and beyond that any payment was voluntary. His Honour took that view of the case, disallowed the objections, and confirmed the call.

MADRID AND VALENCIA RAILWAY.—On Wednesday, Mr. Knill, who was a director and one of the trustees of the funds of this company, was examined at considerable length before Master Blunt, relative to their disposal, and with reference to the history of the undertaking. Mr. Powell, the secretary, was also examined. Mr. Chadwick's summons to appear being returnable, Mr. Rose, his solicitor, admitted that Mr. Chadwick had received it, but that Mr. Chadwick was too ill to attend. The Master intimated that he was not satisfied with the statement; but, though examined on oath, Mr. Rose refused to disclose Mr. Chadwick's address; whereupon Mr. Field, of the firm of Jackson, Sharpe, and Field, solicitors to the estate, applied for a certificate of such refusal, and of Mr. Chadwick's non-attendance, which the Master intimated his intention to give.

DIRECT EXETER, PLYMOUTH, AND DEVONPORT.—On Wednesday the case of Dr. William Hall, of Exeter, referred back by Vice-Chancellor Sir Knight Bruce to Master Sir William Horne, to review his decision, which declared Dr. Hall liable as a contributory under the Act, came on for consideration. Mr. H. Terrell appeared for Dr. Hall, and Mr. Roxburgh for the estate. The facts in Dr. Hall's affidavit were to the effect that he had been induced to attend a meeting at the office of the solicitor and projector of the company, Mr. Flood, at Exeter, but that he had refused to have his name on the prospectus. This, however, was done, and on his remonstrating it was withdrawn. He had had no shares, but paid 50*l.* under protest to avoid litigation. The Vice-Chancellor had decided that, assuming the affidavit to be true, Dr. Hall was not a contributory liable within the meaning of the Act. His Honour, the Master, after animadverting on the fact of the affidavit made by Dr. Hall not having been read or produced before him on the day when he gave his decision against Dr. Hall, and which was based upon the evidence of the secretary and solicitor to the company, who deposed to Dr. Hall's attendance at the meeting in question, and his payment of money under protest and other matters, ordered that the whole case should be re-opened before him, in order that he might review his decision.

DIRECT WEST-END AND CROYDON.—After much deliberation Master Tinney has decided that Mr. Alderman Hooper must be held liable as a contributory in connection with this concern, principally on the evidence of a letter to the secretary, stating it was agreeable that his name should be on the provisional committee, although he took no shares, attended no meetings, nor consented to act on the provisional committee, but with others in that capacity paid 75*l.* towards discharging the debts of the company.

AERIAL NAVIGATION.—A person named Rufus Porter is at Washington, endeavouring to form an aerial navigation company, the stock to consist of 1500 shares, at \$10 per share. The funds, when raised, are to be applied to the construction of an aerial ship, capable of containing 150 passengers, and which, Mr. Porter says, will easily carry them to California or London in three or four days. He proposes to call for an instalment of \$1 only per share, until after a machine has been built capable of carrying three persons, and a journey has been made to Baltimore and back again, thereby demonstrating the feasibility of the plan. He says that several hundreds of persons have already bespoken passage. The prospectus, blanks, and scrip, for the proposed company, are being printed by Mr. Greer. Among other advantages, Mr. Porter includes that of transporting soldiers for the Government, in time of war. Only think of the astonishment of an enemy quietly encamped in the soft moonlight, having, in the twinkling of an eye, a whole regiment of Uncle Sam's Invincibles dropped upon them from a squadron of Porter's ships! But, in process of time, our enemies will have them also, so that hereafter contending squadrons must meet in mid-air, while the peaceable portion of mankind can rest quietly below. Verily there are stirring times ahead.—*Scientific American.*

BRITANNIA BRIDGE.—One hundred and fifty extra hands have lately been taken on these works, in order to expedite the preparations for the floating of the third great tube. The situation which it now occupies being at a much greater distance down the river than the two already floated, has rendered it necessary, preparatory to being floated between the piers, to remove it into the basin occupied by the first tube, where it will be turned round, so as to bring it into the right position to cross the Straits, precisely in the same course as the first tube, parallel to which it is to be placed, on the Anglesy side. This movement is to take place on the 26th of the present month, and the pontoons have already been placed underneath the tube for the purpose. On the 10th of June (the succeeding spring tide), its final transit across to its permanent site is to take place. Since the completion of the present tubular passage over the river, circular windows 4 inches in diameter, fitted with glass, and standing about 20 feet apart, have been placed along the sides.

IRON RAILINGS ROUND ST. PAUL'S.—As the removal of the iron railing which surrounds St. Paul's Churchyard is now said to be in contemplation, "P. C. S. S." imagines that it may not be unacceptable to the readers of *Notes and Queries*, if he transcribes the following account of it from *Hastold's Kent*, vol. ii. p. 382, which is to be found in his description of the parish of Lambeth:—"It was called Gloucester Furnace, in honour of the Duke of Gloucester, Queen Anne's son, who, in the year 1698, visited it from Tunbridge Wells. The iron rails round St. Paul's Churchyard, in London, were cast at this furnace. They compose the most magnificent balustrade, perhaps, in the universe, being of the height of 5 ft. 6 in., in which there are, at intervals, seven iron gates of beautiful workmanship, which, together with the rails, weigh 200 tons and 81 lbs.; the whole of which cost 6*l.* 6*s.* 6*d.* per lb., and, with other charges, amounted to the sum of 11,202*l.* 0*s.* 6*d.*"—*Notes and Queries.*



## FOREIGN INTELLIGENCE.

**MINERS FOR CALIFORNIA.**—Three vessels have sailed from Havre de Grace with a great number of experienced miners for San Francisco. They are well provided with implements of every description for mining purposes and washing the ore, or auriferous sands, provisions, arms, and ammunition, and light iron tents, or houses, which they can put up with the greatest ease, and move about a rodent. Several other vessels are to follow for the next three months, chartered by the companies which have been formed for that purpose.

**AMERICA.**—By the U. S. steam-ship, *Atlantic*, we have advices from New York to April 27th. On the 31st inst. she experienced an accident to her machinery, which is said to have detained her 40 hours. The steam-ship, *Ohio*, had arrived at New York, from Chagres, with gold-dust to the amount of \$120,000. She does not bring any later news from California. The British steam-ship, *New Granada*, from the South Pacific coast, had arrived at Panama with \$65,000 in gold-dust. We have Jamaica advices to the 19th April. The royal mail steam-ship, *Madagascar*, arrived at Mobile on the 19th ult. from Vera Cruz, with \$500,000 in gold-dust. A steam-boat on the Ohio took fire, by which upwards of 100 persons were killed.

**GOLD IN SOUTH AUSTRALIA.**—In the *Mining Journal* of the 27th of April, and a previous Number, we gave very full particulars respecting the discovered existence of gold in this colony, and the excitement created thereby. We yesterday received papers from Adelaide to Jan. 30. No further direct allusion is made to the gold discoveries in the neighbourhood of the River Onkaparinga, but the two companies started continued to advertise their schemes, and the allotment of shares in the one first projected—the South Australian Gold Washing Company—was to take place on the 1st February. The amount of capital subscribed was said to be four times that which it was proposed to divide among the applicants. The South Australian Gas Company had been effectively organized, and would, it was considered, be well supported. The report of the Committee of the Legislative Council on the Adelaide City and Port Railway had been prepared, but its chief recommendations were alleged to be opposed to the views of the projectors. Twenty-five years' purchase at 10 per cent. upon the expenditure, not exceeding \$5,000,000, was the price at which the Government might take the railway; and then there was to be an immediate payment in cash; but interest was to be allowed to the company at the rate of 8 per cent. until the sum should be liquidated. Barro Barra mining shares were quoted 140s., and Princess Royal, 50s. Wheat was 2s. 9d. to 3s. 3s. per bushel. Freight ranged 1d. per lb. for wool; 1d. 3s. per ton; copper to Swansea, 3s.; London and Liverpool, 2s. 10s. per ton. Business was generally in a satisfactory condition, and extensive shipments of copper were being made to Singapore. One large vessel, the *Australia*, bound for Hamburg, had 700 tons of Barro Barra copper on board.

Mr. Walters, the manager of the Copper Company, completed a purchase of 9000. worth of ore from the Enterprise Mining Company. This parcel, we understand, is from the company's property at Lyndoch Valley, lately excited such hopes in the shareholders, and are now, it appears, fully realised. —*South Australian*, Jan. 22.

**BURRA ORE.**—A piece of red oxide, taken promiscuously from the ore raised from the new level in Kingston's 30 ft. level, has yielded 86 per cent. of copper ore. The highest produces ever known previously at the Burra was 72 per cent.; that was from the surface ore at first, which had lain exposed to the air, oxidising perhaps for ages. The ore now raised is, as may be supposed, extremely rich in appearance, and very weighty, being in truth almost pure metal; pieces of native copper are observable in many of the lumps. The solution shows no iron, and very little earthy matter. Between 7 and 8 tons were raised the first day, and being worth 60s. per ton, it was bagged at once as it came to the pit's mouth. The assay was made by Mr. James, and certainly not from one of the richest pieces. Another is to be immediately taken by Mr. Elphick. —*Ibid.*, Jan. 22.

**SMELTING OPERATIONS.**—We are afraid after all that, if anything vigorous is not done by the colonists, the boasted advantage of smelting will not be secured. The Patent Copper Company promised to smelt 10,000 tons of ore the first year, and the others put together ought to have done as much; instead of which, the amount of exports, during the 15 months ending Dec. 31, 1849, was 370 tons. Supposing the ore to have averaged 20 per cent., the total quantity of copper ore smelted in the province and exported would be 1850 tons. Of these, the Kaituma Company smelted about 600 tons. We do not know what quantity of copper may be on hand unexported; but it cannot be much, as there is no object in retaining it—on the contrary, a loss of interest must accrue. Can any one inform us how this tremendous deficiency of performance, compared with promise, arises? —*Ibid.*, Jan. 25.

## ADELAIDE SHARE MARKET—JANUARY 24.

Burra Burra, 140s. to 141s. cash, sellers. We find, on inquiry, that there is no authority whatever for the report that a 10s. dividend was expected in March; it seems to have been inserted for no other purpose. — Princess Royal, 50s. 4 months; sales of 9 and 25 shares are reported to us at 52s. 10s., 6 months. There is but little doubt that the favourable change in the management of this truly valuable property will tend to influence the price of the shares. We, however, look to the results within the next month.—Port Lincoln, 6s. to 6s. 10s., sellers; 200 shares offered at auction were freely taken, and, altogether, the prospects of this mine are encouraging. — Belvedere, 3s. to 2s. 10s., sellers. Several in the market at these prices. — Mount Remarkable, 10s. sellers, dull.—North Kapunda, sales this week, 10 and 15 shares, at 20s. each, 5s. paid. Sellers are free at 20s. — Adelaide, offered at 22s. 6d., Royal, 6s., sellers. — Enterprise, 4s. 15s., sellers. — Paragana, 1s. 10s., sellers. — Strathalbyn, 10s. premium, 10s. paid. Some splendid samples have arrived from this mine. — Wheel Gwailora, 10s., sellers. — Wheel Maria, (paid up) 5s. 10s., sellers. Small shares, 2s. 10s. to 2s. 15s.—Victoria, offered freely to day, at 10s. — Wheel Barons, 11s. to 12s., sellers. — Greenock Creek and Wakefield, prices nominal, out of the market. — Wheel Walkins Nalme Consols, Gold Company, and Onkaparinga Gold Company; these are at present in embryo, and shares not passing through brokers' hands.—Money in small amounts firm at 30 per cent.

**STEAM TO AUSTRALIA.**—We understand that the desired arrangements between the Government and the Peninsular and Oriental Steam Navigation Company, for the immediate establishment of a mail steam route to Australia are making progress. Obstacles interposed by the India-house still constitute the only cause of delay, but a disposition has already been manifested, to defer to the strong feeling of the mercantile community on the subject, and it is, therefore, hoped that a full and satisfactory adjustment of the question may soon be looked for. —*Times*.

## New Patents.

## SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

W. Buckwell, Artificial Granite Works, Battersea, Surrey, civil engineer; and J. Arx, Blackfriars, Surrey, engineer: For improvements in steam-engines, and in propelling vessels. The patentees describe and claim:—1. Placing the cylinders in double-cylinder engines in line transversal to the shaft, instead of in the same line as heretofore, and uniting the piston-rods into one. Also employing but one slide valve for the two cylinders, which has a channel or channels cut in it to allow of the passage of steam to and from the boilers.—2. Making stationary steam-boilers of less than 4 feet in diameter and 12 times their length, and employing two or more heated by the same furnace, according to the amount of steam required to be generated, instead of increasing the size of the boiler. The boilers are supported on fire-tumps or bars, and covered in at top with some non-conducting substance. The heating effect is increased by gradually enlarging the space around the boilers towards the fire end, and partially arresting the products of combustion by means of moveable bridges. In the case of marine steam-boilers, it is proposed to employ tubular ones, for the purpose of increasing the heating surface, and thereby economising fuel; and to avoid the liability of the tubes being uncovered from the vessel's pitching and rolling, they are placed vertically. The steam space is increased by the use of a dome top, and other necessary additions.—3. A new propeller, which consists of a conical shaft, having two or more pyramidal or triangular inclined surfaces fixed thereto.

## LIST OF PATENTS GRANTED DURING THE PAST WEEK.

E. Daiglish, of Glasgow, merchant and calico printer, for certain improvements in printing, and in the application of colours to silk, cotton, linen, woolen, and other textile fabrics.  
Gustave Eugene Michel Gerard, of Paris, France, for improvements in dissolving caoutchouc (Indian-rubber) and gutta percha.  
J. Gibbs, of Devonshire-street, Portland-place, Middlesex, civil engineer, for improvements in artificial stone, mortar, and cements, and in modes of manufacturing the same.  
J. Tatham and D. Cheetham, of Rochdale, Lancashire, machine makers, for certain improvements in machinery of spinning and operations connected with the manufacture of cotton, wool, silk, and other fibrous substances and fabrics, and in the application of certain materials to the manufacture of textile fabrics.  
G. Robbins, of Forest Lodge, Southampton, gentleman, for improvements in the construction of railway carriages.  
J. Youll, of Ardwick, Manchester, brewer, for certain improvements in machinery or apparatus for washing, cleansing, filling, and corking bottles and other vessels.  
G. Harwood, of Ipswich, Suffolk, engineer, for improvements in grinding corn and other substances.

## DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

J. C. Elze, Albany-road, Camberwell, beer and spirit preserver.  
J. Holford, and B. Collard, Lord-street, Liverpool, frame for carpet and other bags.  
F. Drury, Albany-street, Regent's-park, steel ball. —*Mechanics Magazine*.

## COAL MARKET, LONDON.

## PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

**MONDAY.**—Bate's West Hartley 14—Buddle's West Hartley 14—Carr's Hartley 14—East Adair's Main 12—Hastings Hartley 14—North Percy Hartley 14—New Tanfield 13—Old Tanfield 12—Ravensworth West Hartley 14—Tanfield Moor 13—Wylam 13—Wylam 14—Wall's End Brown 13—Bewick and Co. 14—Burraton Killworth 13—Gosforth 13—Hilda 13—Original Gibson 14—Eden Main 15—Hutton 13—Hawell 16—Lambton 15—Caradoc 15—South Hartlepool 15—South Kellie 14—West Kellie 14—Whitworth 13—Adelaide 15—Tees 16—South Durham 15—Tees 16—Cowan Hartley 14—Gosforth 13—Langenbeck 20—Newport Steam 17—Nixon's Merthyr and Cardiff 19—Buddle's Hartley 14—Ships at market, 21s; sold, 19s.  
**WEDNESDAY.**—Bate's West Hartley 14—Buddle's West Hartley 14—Carr's Hartley 14—East Adair's Main 12—Hastings Hartley 14—North Percy Hartley 14—Old Tanfield 13—Tanfield Moor 13—West Hartley 13—Wylam 13—Wall's End Brown 13—Burraton Killworth 13—Gosforth 13—Hilda 13—Morrison 14—Lambton Primrose 15—Hutton 13—Hawell 16—Jonasdon 13—Lambton 15—Russell's Hartley 15—Caradoc 14—Cassop 14—Denison 13—Hough Hall 14—South Hartlepool 15—Whitworth 12—Adelaide 15—Tees 16—Gordon's Toss 12—Seymour Toss 12—South Durham 15—Tees 16—Cowan Hartley 14—Ebbw Vale 14—North Abbey Grigolia 19—Nixon's Merthyr and Cardiff 19—Ships at market, 14s; sold, 36s.  
**FRIDAY.**—Bate's West Hartley 14—Carr's Hartley 14—Hastings Hartley 14—Hollywell 14—Jonasdon's Hartley 13—North Percy Hartley 14—Old Tanfield 12—Tanfield Moor 13—West Hartley 13—Wall's End Brown 13—Burraton Killworth 13—Brown's Gas 12—Gibson 12—Hilda 13—Bell 14—Belmont 14—Hutton 16—Hawell 16—South Eden 13—Stewart's 14—Caradoc 14—Cassop 14—Cowan Toss 12—Tees 16—Cowan Hartley 14—Newport Steam 17—Nixon's Merthyr and Cardiff 19—Ships at market, 6s; sold, 5s.

**BANK OF AUSTRALASIA** (Incorporated by Royal Charter, 1835). No. 8, AUSTINFRIARS.—The Court of Directors GRANT BILLS and LETTERS OF CREDIT to the undermentioned branches—viz.: Sydney, Maitland, Melbourne, Geelong, Hobart Town, Launceston, and Adelaide, on terms which may be learnt on application, either at their offices, 8, Austinfriars, or at their bankers, Messrs. Smith, Payne, and Smiths. By order of the board, WM. MILLIKEN, Secretary.

**STEAM TO INDIA AND CHINA, via EGYPT.**—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

**THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY** BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

**BOMBAY.**—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honorable East India Company's steamers.

**MEDITERRANEAN.**—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 30th of the month.

**SPAIN AND PORTUGAL.**—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and Oriental-place, Southampton.

**LINEARES LEAD MINING ASSOCIATION, JAEN, SPAIN.**—At the General Half-Yearly Meeting of the shareholders of this Association, held at No. 2, New Broad-street, on Wednesday, May 8, 1850.

THOMAS FIELD, Esq., in the chair.

It was resolved,—That the report now read, and the balance-sheet certified by the auditors appended, be received and adopted by the meeting.

That a further capital of £1500 be raised by the issue of 500 additional shares of £3 each, payable by instalments of £1 per share, on or before the 15th day of May inst.; a further sum of £1 per share on the 15th day of June, and the remaining £1 per share on the 15th day of July next; and that the holders of the 5000 existing shares be entitled to participate in the issue of such shares in the proportion of one share for every 10 shares now held by them respectively.

That if the said instalments be duly paid on the days specified in the foregoing resolution, or as to the two last instalments within 15 days thereafter respectively, then every such shareholder shall be entitled to a preferential dividend of 10 per cent. per annum; and, in addition thereto, be entitled to share equally with the 5000 now existing shares in any profit remaining to be divided.

That if the whole of the additional shares referred to in the foregoing resolution be not so applied for on or before the 15th of May inst., then any such shares remaining to be allotted may be disposed of at the discretion of the directors.

That the sum of £350 be allowed to the directors for their services during the past year.

That the thanks of the meeting be given to the directors, for their exertions and attention to the interests of the Association.

That the thanks of the shareholders be due to Mr. Henry Thomas, for the professional ability and zealous exertions he has displayed, during the course of the operations, for bringing the Lineares Mines to a productive state; also to Cap. Curry, for his earnest co-operation and support to Mr. Henry Thomas.

That this meeting be adjourned to the 16th inst., at One o'clock.

That the thanks of the meeting be due to the chairman, for his conduct in the chair this day.

THOMAS FIELD, Chairman.

**TO IRON MANUFACTURERS, ENGINEERS, ARCHITECTS, RAILWAY COMPANIES, &c.**—The attention of all PARTIES CONNECTED WITH THE MANUFACTURE AND USE OF IRON, is invited to the IMPROVEMENTS lately PATENTED BY MR. MORRIS STIBLING.

1. THE TOUGHENED CAST-IRON, which, in round numbers, may be said to be double the strength of ordinary cast-iron, and from 60 to 70 per cent. stronger than the best, at an extra cost of from 10s. to 12s. per ton. This iron is strongly recommended for GIRDERS, BEAMS, &c., for Railway Bridges, Fire-proof Buildings, and heavy machinery; also for Railway Chairs—and, in fact, for all purposes where cast-iron can be used, the same strength being obtained by lighter castings at less cost. The advantage of this for exportation is evident.

2. THE IMPROVEMENTS IN THE MANUFACTURE OF WROUGHT-IRON, whereby common or merchant bar is made equal in quality to best bar, and much stronger, at a very small cost. Also in the MANUFACTURE OF RAILS, and TIRES FOR WHEELS, &c., a surface being produced very much harder than that of the iron now used, at an extra cost of only 7s. 6d. per ton.

Further particulars respecting the different kinds of iron, and the terms of license, &c., may be obtained on application to Mr. J.E.E. Civil Engineer, 6, John-street, Adelphi, London.—April 17, 1850.

**UNSTON IRON WORKS, NEAR SHEFFIELD.**—Messrs. RANGLY, WRIGHT, and Co. invite the attention of IRON MANUFACTURERS, IRON FOUNDERS, &c., to their DERBYSHIRE FIG-IRON (smelted entirely with coke), which they can with confidence recommend for all purposes where purity of metal, combined with tenacity of strength, is an object. Their No. 3 pig-iron is sufficiently fluid for all descriptions of foundry-work. PIPING made from this quality will admit of almost any amount of hydraulic pressure. As a mixture with tender iron, or for purposes requiring great strength, this iron is particularly adapted. For FORGE PURPOSES, the loss from waste in cinder, &c., is much below the usual average, and the product a very superior iron.

Messrs. R., W., and Co. also beg to inform RAILWAY CONTRACTORS, ENGINEERS, GAS and WATER-WORKS COMPANIES, BUILDERS, MILLWRIGHTS, &c., that having purchased an extensive assortment of models and apparatus from Messrs. Wm. Graham and Co., of Milton Iron-works (who have declined business), and having engaged experienced workmen from that establishment, they are in a position to furnish ALL DESCRIPTIONS OF CASTINGS, suitable for the above branches, and at moderate prices.

**SCHOOL OF MINERALOGY, CHEMISTRY, AND GENERAL SCIENCE.**—MESSRS. NESBIT'S ACADEMY, No. 38, KENNINGTON-LANE, LAMBETH, NEAR LONDON.

In this SCHOOL, in addition to all the branches of a good education, EVERY FACILITY is afforded for obtaining a knowledge of ANALYTICAL CHEMISTRY and NATURAL SCIENCE, as applied to the Arts, Manufactures, and Agriculture. The pupils are practically taught in the Laboratories, which are fitted up with every essential for the most extensive chemical investigations.

Mr. Nesbit's works on Land Surveying, Mensuration, Gauging, Arithmetic, English Parsing, &c., may be had of all booksellers.

References.—Dr. D. B. Reid, F.R.S.E., &c., House of Commons, Westminster; R. Prosser, Esq., C.E., Birmingham; E. L. Bullock, Esq., Editor of *Fresenius's Chemical Analysis*; Condit-street, Regent-street; J. Gardner, Esq., M.D., Editor of *Leibig's Letters*, &c., Mortimer-street, Portland-place; and W. Shaw, Esq., Strand, London.

**ROYAL POLYTECHNIC INSTITUTION.—COURSE OF TWENTY LECTURES**, of two hours each, on USEFUL PRACTICAL CHEMISTRY, under the direction of J. H. FEYER, Esq., adapted for Manufacturers, Schoolmasters, and Students.—The Course will be a Systematic Series on the Elementary Details and Manipulations of Chemistry, the Atomic Theory and Symbols, Preparation of Gases, Acids, Saline Bodies, Qualitative and Quantitative Analysis.

To commence on the 27th inst.—Fee, including admission to the Institution during the Course, Two Guineas. R. L. LONGBOTTOM, Secretary.

On Thursday, May 16, will be published, **MINING ADVENTURE: with a DIGEST of the COST-BOOK SYSTEM, STANNARIES, and GENERAL MINING LAWS.** BY THOMAS BARTLETT.

London: Edinburgh Wilson, No. 11, Royal Exchange.

**THE MINING ALMANACK for 1850:** compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the special sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in MAY NEXT, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interest.—Names of subscribers are requested to be addressed to Mr. H. English, 59, Fleet-street.

**THE PATENT OFFICE AND DESIGNS REGISTRY.** No. 210, STRAND, LONDON.

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION OF INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALUABLE economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

**CORNISH STEAM-ENGINES.** The number of pumping-engines reported for the month of April is 26—the quantity of coals consumed being 2190 tons, lifting, in the aggregate, 20,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 52,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—The following have exceeded the average:—

Mines.	Engines.	Length of stroke.	Load in pounds.	Load per inch sq. on piston.	Stroke per min.	Consumption of coal in lbs. per bush.	Millions lifted 1 foot by 1 bush. of coal.	Lifted 1 foot by 1 bush. of coal.
Great Work.	Leed's 60-in.	9-0	55,343	15-2	7-5	1968	60-0	72
East W. Croft.	Trevanion's 80	10-33	82,333	12-3	6-5	2904	56-0	67
Polidoc.	Sim's 85-in.	10-33	77,545	9-5	10-4	3992	87-0	68
S. W. Francis.	75-in.	11-0	34,553	10-1	5-2	1880	60-2	72
United Mines.	Taylor's 85-in.	11-0	85,921	15-5	6-6	4381	57-8	69
Ditto.	Cardosa's 90-in.	9-0	100,682	12-8	7-1	3973	55-9	66
Ditto.	Eldon's 30-in.	9-0	15,631	16-0	8-0	496	64-2	76
Ditto.	Loam's 85-in.	10-0	87,947	11-6	7-6	3654	58-1	66
Ditto.	Hocking's 85-in.	10-0	97,817	14-4	7-6	4289	57-6	69
Tywarthay.	Gardiner's 80-in.	10-0	75,928	12-0	7-6	2784	54-9	65
East W. Rose.	Penrose 70-in.	10-0	77,033	18-0	4-3	1840	56-9	68
Ditto.	Michell's 70-in.	10-0	75,937	17-7	3-9	1640	57-2	68

**INDURATED AND IMPERVIOUS STONE, CHALK, &c.**—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISONISED MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large. Apply to HUTCHISON & CO., 140, Strand, London; or Tunbridge Wells, Kent, and Caen, Normandy, stating name, address, and capital at command.

N.B.—Houses cured of damp. The products of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c. LICENCES GRANTED.

**PATENT IMPROVEMENTS IN CHRONOMETERS.** WATCHES AND CLOCKS.

E. J. DENT, 49, Strand; 28, Cockspur-street; 34, Royal Exchange (clock tower area). Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1849. Silver lever watches, jewelled in four holes, 6 g. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 6 g. to 12 g. each.

DENT'S PATENT DIPTEROSCOPE, or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

**SEWERAGE OF LONDON.**—The ATTENTION of the COMMISSIONERS appointed to determine upon the MOST EFFICIENT MATERIAL for the CONSTRUCTION of the SEWERS of LONDON, is particularly directed to the ASPHALTE OF SEYSSSEL, which more than any other material is applicable to the CONSTRUCTING and INTERNAL COATING OF BRICK CULVERTS and OTHER CHANNELS for DRAINAGE.

The experiments made by the Royal Artillery on the embrasures of Plymouth Citadel, constructed of Seyssel Asphaltic Brickwork, under the orders of the Hon. Board of Ordnance, have fully proved the superiority, adhesiveness, and strength of Seyssel Asphalt over all other cementitious compositions. A printed account of these experiments can be had on application to J. FARRELL, Secretary.

Seyssel Asphalt Company—"Claridge's Patent"—Established 1838. Note.—The application of the Asphalt of Seyssel is specially recommended by the Commissioners on the Fine Arts for covering the ground line of brickwork in marshy situations, and it has been suggested that it would be peculiarly applicable for covering the areas of closed grave yards, and for the construction of catacombs.

**UNITED GUARANTEE AND LIFE ASSURANCE COMPANY.**—35, OLD JEWRY, LONDON.

CHAIRMAN—The Right Honourable LORD ERSKINE. VICE-CHAIRMAN—JOSHUA F. BROWN WESTHEAD, Esq., M.P.

TO BANKERS, DIRECTORS OF RAILWAYS, PUBLIC COMPANIES, and EMPLOYERS GENERALLY.—Particular attention is invited to the objects of this Company, which provides not only guarantee to employers of the fidelity of their officers, but offers an economical plan of life assurance, whereby important interests are secured to the employed.—POLICIES for GUARANTEE and LIFE ASSURANCE are ISSUED SEPARATELY, if desired.—Prospectus and further information may be obtained from J. KNIGHT, Secretary.

**ACCIDENTAL DEATH INSURANCE COMPANY.** (Completely Registered under the Act 7 and 8, Victoria, c. 110). 7, BANK BUILDINGS, LOTHBURY, LONDON. (ADJOINING THE GOVERNMENT ASSURANCE OFFICE, OLD JEWRY).

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MANAGERS: George Wodehouse Currie, Esq., 29, Cornhill. Montgomery Gladstone, Esq., Manchester. Kenyon Stevens Parker, Q.C., Lincoln's-inn.

ADDRESSES: Thomas A. Mitchell, Esq., M.P., 9, New Broad-street. Robert Tower, Esq., Salvador House, Bishopsgate-street. Thomas M. Wodehouse, Esq., 471, Old Broad-street.

BANKERS—Messrs. Currie and Co., 29, Cornhill. Solicitors—Messrs. Malby and Robinson, 7, Bank-buildings. CONSULTING ACTUARY—Edward Riley, Esq., F.R.S.A. SECRETARY—William Young.

CLASS I.—2s. 6d. to insure £100. CLASS II.—2s. 6d. to insure £50. CLASS III.—2s. 6d. to insure £25.

The numerous casualties in mines, collieries, &c., which, by depriving the workman of his life, plunge his family into misery and want, have given rise to this company, whose rates are so low as to bring the benefits of insurance within the reach of the humblest classes. The directors invite the attention of the owners and lessees of mines and collieries, and others employing large bodies of men, to the principle of insuring them in the mass—in which case an abatement may be made from the above rates.

WILLIAM YOUNG, Secretary.

BY HER MAJESTY'S ROYAL LETTERS PATENT. **MASTERS & CO., ORIGINAL INVENTORS and SOLE PATENTEES** of the following SCIENTIFIC and USEFUL INVENTIONS, beg to call the attention of the Nobility and Gentry to their latest discovery in the preparation of SODA WATER, &c., by their

**PATENT SODA-WATER and AERATING APPARATUS.** By the aid of which Soda Water, and all aerated waters, can be made and fully charged with carbonic acid gas in a few minutes, and the flattest Beer or Wine can be made as brilliantly sparkling as Champagne in an equally short time, and the expense mere nothing.—Price of machine, 30s. and upwards, which needs only to be seen to be appreciated. Adapted for shippers to every climate. Also,

**MASTERS' PATENT ICE SAFE.** For preserving Provisions Cool in the hottest weather in summer. **MASTERS' PATENT FREEZING MACHINE.** For making Dessert Ices, Freezing Spring Water, and Cooling Wine at the same time, with or without ice. The largest size is suitable for confectioners, and will make from 50 to 100 quarts of Dessert Ice in a few minutes.

**MASTERS' PATENT SHERRY COBBLER FREEZING and COOLING JUG.** For producing Pure Ice from Spring Water, on your own table, in five minutes, without the aid of ice, by his Freezing Mixture, which will produce ice in one minute in the hottest climate. Every description of APPARATUS for PRODUCING ICE ARTIFICIALLY. Also, by Royal Letters Patent.

**MASTERS & CO.'S PATENT ROTARY BUFF KNIFE-CLEANING MACHINE,** Which will clean and polish, equal to new, 12 knives in one minute, without noise or dust. Descriptive particulars and engravings, with upwards of 700 testimonials, forwarded on application to MASTERS & CO., 333, Oxford-street, Regent-circus, and his Depot adjoining the Polytechnic; also, at 2, Mansion-house-place, City.

**CAUTION.—MECH'S MAGIC STROP.**—"The Real Magic Strop."—"The Double Magic Strop."—"The Magic Strop."—are all base imitations of MECH'S MAGIC STROP. None are genuine without Mech's name, which